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Original Communications.

*TREATMENT OF CANCER OF THE RECTUM, WITH A REPORT OF TWENTY-FIVE CASES.**

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If you will pardon me for alluding to the diagnosis in a paper professedly considering only treatment, there are two points so important that I wish to say a very few words in reference to them. First, the disease often escapes the attention of the family physician simply because he fails to make an examination. Not long since I saw a gentleman with a very distinct cancer of the descending colon, discovered the moment that the hand touched the abdominal wall, yet it had been entirely overlooked by his physician simply because he had never examined the abdomen. One of the cases reported below had had positive symptoms of cancer of the rectum, including bloody stools, for two years, and yet his physician had never once made a rectal touch.

The second point is that in the digestive tract cancer is not necessarily confined to late middle life or old age. We are so accustomed

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to take cancer of the breast as a type, in which organ cancer before the age of forty is rare, that we are in danger of considering the same rule as applying to other parts of the body. But in the digestive tract I have known several cases occurring before thirty, and recently Czerny (*Münch. Med. Woch.*, 1896, No. 11) has reported one case in a little girl of thirteen.

Turning now to the treatment of cancer of the rectum, this is divided into the *palliative* and the *radical*. The cases suited to palliative treatment are those in which the extent of the disease is too great to allow of radical treatment or the condition of the patient is such as to forbid extirpation of the disease. By the "extent of the disease," I do not mean chiefly the amount of the rectum involved, for that is only occasionally too great to allow of radical treatment. Whether the radical treatment can be done or not depends far more on the involvement of neighboring organs. If the bladder or the prostate in the male, or the posterior wall of the vagina and the lower part of the uterus in the female, are extensively involved in the disease, it will rarely be possible to effect a cure or even to obtain recovery after the radical treatment. Yet in one case operated upon by my colleague, Professor Montgomery, in which the entire posterior wall of the vagina and the lower part of the uterus were involved, he was able not only to remove the rectum, but also at the same time the uterus, ovaries, and the posterior wall of the vagina, and obtain a most satisfactory cure. Parts of the prostate and of the bladder in the male have also been removed with success, but ordinarily this cannot be hoped for. Usually cases in which these organs are involved would be best subjected to palliative treatment only.

The Palliative Treatment.—This consists in colostomy, in order to allow the feces to escape from an artificial anus and to avoid the damming up of the feces in the upper rectum and the colon, or, if there be not much obstruction, to avoid the passage of the feces over the ulcerated surface of the rectum. Either of these conditions, if not relieved, is productive of excessive pain and exhaustion, and, in the case of ulceration, there may be serious repeated hemorrhages.

Formerly our only resource was a lumbar colostomy. In my experience that is a most ineffectual operation. It is very difficult to produce an effective spur between the upper and lower parts of the opening which will deflect all of the feces through the artificial anus. Almost invariably a small, and in some cases a very considerable, portion of the fecal material, instead of escaping from the artificial anus, continues its course into the bowel below the opening, making the artificial anus therefore to that extent useless. The only reason in former times for doing a lumbar colostomy was that we could operate without opening the peritoneum, a danger of the most serious character in pre-antiseptic days. Since, however, we have learned to deal with the peritoneum fearlessly by modern methods, there is no reason why lumbar colostomy should still be practiced. Besides, in some cases, the colon cannot be found, and the small intestine has been opened by error. I remember very vividly one case (No. XVII)—in which I did a lumbar colostomy about ten years ago—in which, to gain access to the colon, I was obliged to open the peritoneum and was in the greatest possible doubt for a considerable time as to which one of the two coils of intestine was the colon. I decided, fortunately, at last upon the right one. Had I opened the other, I should have created the artificial anus in the small intestine, which would have led to speedy death by inanition. From that time to the present, excepting in one case (No. XVIII), I have invariably done an inguinal colostomy, and for some years by Maydl's method.

As this method may not be familiar to all of you, I will briefly describe it. If we have reason to believe that the cancer has not extended so far up as to interfere with, or that within a reasonable time it will involve the opening to be made in, the bowel, the operation is done in the left inguinal region. If the cancer has invaded the sigmoid flexure, then the artificial anus is made in the right inguinal region, or if circumstances make it desirable, in the transverse colon.

An oblique incision is made in the left inguinal region, the centre of which lies just above the anterior superior spine of the ilium. The peritoneum having been opened, the finger is swept from the opening externally and then posteriorly along the belly wall, when, as pointed out by J. Chalmers Da Costa (*Medical News*, June 9, 1894, p. 634), the first coil of intestine met with must necessarily be the colon. If this maneuver be followed very little difficulty will be experienced in finding the colon. Ordinarily even this is unnecessary, for the colon will present itself at the wound or be found by the finger the

moment it enters the abdominal cavity. A loop of colon is then drawn out through the wound, and the upper colon is drawn down until all the slack is taken up. The object of this procedure is twofold: First, if the operation be a merely palliative one, by drawing down all of the slack we can to a great extent prevent or lessen the amount of subsequent prolapse of the bowel; secondly, if the radical operation is done later there will be less difficulty in drawing down the stump of the bowel. With a pair of hemostatic forceps the mesentery is perforated and a glass or other disinfected bar is passed through the opening. The bowel is now secured to the belly wall at the upper and lower ends of the incision by a transverse suture, so as to prevent any hernia resulting from efforts at vomiting, and the wound is then closed, excepting the central part where the loop of bowel protrudes. Sometimes I have sewed the parietal peritoneum to the skin so as to bring a large surface of peritoneum instead of the cut edges of the belly wall in contact with the bowel, and thus secure an earlier adhesion. How early this takes place is well illustrated in Case II. Five hours after the Maydl operation was completed, the patient complained of a great deal of pain from flatus owing to too sharp a kink of the colon over the glass bar, as I had not allowed quite sufficient slack of the bowel over that obstacle. Accordingly, as I had not in that case secured the bowel by any sutures, I seized the bowel with the finger and attempted to draw the upper portion down to a slight extent. The adhesions already existing between the intestine and the belly wall were so strong that it required considerable effort to loosen the bowel.

Instead of the glass bar which I ordinarily use, I have on two occasions passed a rope of iodoform gauze through the opening and secured it to the skin on each side by a stitch, so as to keep it taut. This answered the purpose perfectly. Another expedient I have also tried on two occasions with satisfaction (Cases XXI and XXII) is that suggested by Bidwell (*Lancet*, 1895, i, 753). Instead of the bar or rope one or two stitches are passed through the opening in the mesentery, and by means of the stitches the margins of the skin on each side are sewed together under the loop of bowel, the skin thus replacing the bar or gauze rope. Should the necessity for immediate opening of the bowel exist, as in the case of a child with an imperforate rectum, upon whom I operated forty-five hours after birth, the bowel is then sutured all around to the skin by either an interrupted or better a continuous silk suture, when it may be opened fearlessly at once.

In dressing such a case, I soon found one little difficulty. If the gauze dressing is placed directly on the intestine, in a very short time after the operation the gauze becomes adherent to the bowel and is removed with some difficulty. To avoid this a small piece of disinfected rubber dam or oiled silk is placed over the bowel, and no such adhesions then take place. If the bowel is not to be opened at once, I have usually waited till the second or third or even till the fourth day, and then opened it either in the axis of the bowel or transversely, according to the need. If it is the intention that the opening in the colon shall only be temporary, the incision should be made longitudinally, so that it may be closed at a later operation. If the opening is intended to be permanent it is best to make a transverse incision; either then or later this is carried all the way down to the bar, rope, or skin, whichever method is employed, so as to cut the bowel entirely through. Usually one or more small vessels in the mesentery will spurt; these can be seized with hemostatic forceps and tied with silk. If there is any redundant bowel protruding, it may be resected to the level of the skin. All of this can be done without an anesthetic, as it causes little or no pain.

The ultimate result of a Maydl operation is most satisfactory. The patient can defecate either in the standing position or lying on the side. Usually a single or at most two movements of the bowels occur in the twenty-four hours, and meantime the patient is able to go about and attend to his ordinary occupations without the slightest inconvenience; no odor is perceptible, and the patient can enter into an active business and social life with perfect security. In Cases II and III this is notably the case. If diarrhea occurs, then there is apt to be trouble, and the patient is obliged either to remain indoors or to dress the wound much more frequently.

The mode of dressing such a wound is best described in the two cases just referred to. Some protrusion of the bowel occurs occasionally, but not to such an extent as to become a serious annoyance.

The advantages of a Maydl operation as a preliminary to the radical operation will be referred to later on.

Patients who are not amenable to a radical operation, and in whom the colostomy is done

merely for palliation, are rendered very much more comfortable and life becomes far more bearable. Its danger is very slight and its advantages very great. Incontinence being the exception rather than the rule, they can adjust their lives very readily to the varied conditions in which they find themselves. So comfortable have been several of my patients that they have been unwilling to submit themselves to a second operation for the closure of the artificial anus, being persuaded that they are more comfortable with the anus in a position where they can dress it personally than if they were to have an artificial anus at the end of the spine.

The Radical Treatment.—Until a few years ago no case was deemed suitable for radical operation unless the growth was within reach of the finger and was so limited as to require the removal of only a small portion of the rectum. This was still the prevailing opinion among the English surgeons so late as 1889. Mr. Allingham deprecated the removal of any growth, even four inches up the bowel, as unscientific and unsurgical, and Mr. Treves in his "Operative Surgery" states that the cases suited to excision are "comparatively few in number," and that "very rarely does the excised portion measure more than three inches in length. In no case should the peritoneum be deliberately opened." My own and many other reported cases show that these are by far too conservative views. We owe the extension of the modern radical treatment of cancer of the rectum chiefly to the enterprise and audacity of German surgeons. American and later English opinion (Ball, in Treves' "System of Surgery," ii, 787) seems to have recently undergone a rapid change in the direction of far more radical interference, so that it is now not uncommon to see cases reported in which six or eight or even ten and twelve inches of the rectum (Purcell, *Lancet*, 1896, i, 725) have been removed. Several of my cases illustrate extensive resections of six to nine and a half inches; in fact, these cases are more than a resection of the rectum; they involve a considerable portion of the sigmoid flexure of the colon. It may be stated, as a general rule, that all portions of the rectum and colon are now amenable to the radical treatment, if other conditions are not such as to forbid it. Those that are too low down to be reached by a celiotomy can be reached by the sacral method, and those too high up for the sacral method can be attacked by celiotomy. In fact the entire alimentary canal, except a portion of the esophagus, is now accessible to the surgeon.

The radical treatment may be considered under two headings: first, the preliminary treatment; second, the actual resection or amputation of the rectum.*

In the preliminary treatment the rectum must be thoroughly unloaded of its contents in all cases, which, if there is any obstruction of the bowel, are very considerable and may be enormous. Ordinarily surgeons lay down the rule that several days, amounting to a week or ten days in the opinion of some, are necessary for this preparation. My own experience leads me to believe that a much longer time is necessary to unload the bowels in the case of serious obstruction. For instance, in Case I a week was employed in unloading the rectum, and I supposed that it was reasonably empty, yet at the operation the field of operation and the towels and sheets around the patient were flooded with a continuous stream of fecal matter, which poured out for such a length of time that I was unwilling to prolong the cleansing of the bowel and terminated the operation without having effected a complete evacuation of the colon. In Case V seventeen days were employed in daily efforts, by moderate laxatives and repeated enemas, to cleanse the bowel, and yet it was found loaded with feces above the obstruction. The same condition has been found at operations by Schwartz after three weeks' preliminary attempts at complete evacuation, and by Kraske after a month. The accumulation has been so great that I have been compelled to believe that in some cases almost the entire colon was filled with fecal matter due to the obstruction. If such difficulty exists in emptying the bowel, how much more difficult will it be to disinfect it!

Whether a preliminary colostomy shall be done or not will depend chiefly on the amount of bowel to be removed. If we have good reason to believe that the cancer does not extend so high as to require the opening of the peritoneum, I should then be perfectly willing to forego a colostomy and trust to repeated efforts at unloading the bowel by moderate laxatives, covering not less than one week, and if necessary two or three. In administering these it is very necessary, however, to be watchful of the strength of the

*Resection is the removal of a part of the rectum in its continuity, the anal portion being left. Amputation is the removal of the lower end of the rectum, including the anus.

patients. They are usually persons who have been very much exhausted by the continued pain and obstruction, and more or less by the auto-infection which has taken place, and if they are further weakened by active purgation they will be rendered unable to endure the operation. Usually, however, in cases where the cancer is low down, involving the third part of the rectum, this preliminary cleansing is sufficient without colostomy.

The great danger of all resections or amputations of the bowel, excluding primary shock and hemorrhage, is *infection.* If the peritoneum be not opened this danger is minimized, so that even should the wound become infected it will cause a local suppuration, but not peritonitis; hence this confessedly often imperfect method of cleansing the bowel may be sufficient in such cases. If, however, the cancer is situated more than three inches, or especially if more than four inches, above the anus, it is practically certain that the peritoneal cavity must be invaded. (Yet in Cases X and XIII I removed four and five inches without opening the peritoneum.) In all such cases I am, therefore, decidedly in favor of doing a preliminary colostomy for three reasons: first, it will greatly improve the general health; secondly, it will relieve the obstruction and consequently the pain; and thirdly, it enables us to disinfect the bowel far better than without a colostomy. By means of a catheter introduced into the inferior opening of the Maydl operation, the lower rectum can be washed out from above and the bowel not only cleansed of its fecal contents, but also to a large extent, though never completely, disinfected by a boric acid solution or a very weak bichloride solution, followed by a copious washing out with boiled water. But what is much more important, the contents of the bowel being deflected through the artificial anus, any later infection from soiling by feces is prevented. In women the vagina also should be well disinfected.

In resection or amputation of the rectum, if the anal portion and the anus itself is involved, then the rectum must be *amputated* at a point at least an inch above the growth. If an inch and a half or two inches above the anus are free, then it may be best to do a *resection* of the diseased portion and in some cases to reestablish the continuity of the bowel by methods to be discussed shortly.

The mode of access to the bowel has been entirely revolutionized by the efforts of Kocher, Kraske, and their followers. The old operation through the perineum only allowed us to remove growths at or but little above the anus, but did not allow us to attack growths which were beyond or just within reach of the finger. Kocher took the first step toward the modern operation by the removal of the coccyx in 1874. This method was employed in Cases VIII and IX. In 1885 Kraske (*Arch. für Klin. Chir.*, xxxiii, 563) practiced a more radical operation by removing not only the coccyx but by chiseling off an oblique portion of the sacrum from opposite the left third sacral foramen to the lower left border. Since then his followers have increased the extent of the resection step by step, until Rose has even resected the sacrum transversely at its junction with the ilium. So extensive a resection of the sacrum, however, does not seem to be either necessary or desirable. A resection up to the third sacral foramen, being careful not to injure the third sacral nerve, should be the limit of operative interference with the bone, since if the third nerve is injured the innervation of the bladder is apt to suffer and incontinence of urine may result. I have never gone beyond that point, but have in several cases resected the sacrum transversely at that level, and have never seen the slightest trouble either from interference with the innervation of the bladder or trouble within the spinal canal itself, though in Cases II and V it was recognized that the spinal canal was opened. Not only can the rectum and part of the sigmoid flexure of the colon be resected through such an opening, but repeatedly the uterus and ovaries have been removed through the same opening.

I have always employed ether as the preferable general anesthetic, but in Cases XXII and XXIII I employed Schleich's fluid very successfully as a local anesthetic.

The operation is done as follows: The patient lies upon his side, whether upon the left or the right is, I think, a matter rather of the preference of the operator than otherwise. Those who are right-handed will, as a rule, find it more convenient to have the patient lie upon the right side. An incision is made from the posterior inferior spine of the ilium, curving toward the coccyx; it is then prolonged in the middle line nearly to the anus. If it is necessary to remove the lower part of the rectum, including the anus, then from the end of this incision two elliptical incisions are carried around the anus, one upon each side. If, however, the anal portion is to be preserved, the incision terminates just behind

the anal aperture. Sometimes I have found it desirable at the upper end to make an incision toward the right side in order to free the right side of the sacrum. The incision is carried directly to the bone, and the soft parts are rapidly dissected away from the bone till the edge of the sacrum and the sacro-sciatic ligaments are reached. These are divided and the soft parts separated from the left side of the coccyx and sacrum. The hemorrhage is apt to be quite free, but is arrested either by hemostatic forceps or by pressure with gauze sponges aided by hot water if necessary. But I usually waste little time on the hemorrhage until the soft parts are completely divided from the edge of the bones. Then the hemorrhage is arrested. The soft parts are then divided upon the other side of the sacrum and coccyx. With the finger, the Allis dissector, and a pair of blunt scissors curved on the flat, we now loosen the rectum from the anterior surface of the sacrum and coccyx, the tissues not readily loosened being cut either with the knife or the scissors. The hemostatic forceps or sponge pressure is then again required to arrest the hemorrhage. Commonly I pack with gauze sponges, and while the hemorrhage is being checked proceed to the resection of the sacrum. The middle sacral artery will require ligation. I do not usually chisel the sacrum as recommended by Kraske and others, but with a large pair of bone forceps I divide the sacrum transversely at the fourth sacral foramen if it is pretty clear that this will be high enough, or I resect directly at the third foramen. Occasionally when I have divided the bone at the fourth I have found it necessary later to take off a second piece with the forceps. Not uncommonly, as soon as the bone is resected, free hemorrhage takes place from its cut surface. Sometimes the vessels can be crushed between the jaws of the hemostatic forceps, but in any case in which the hemorrhage is troublesome, Horsley's putty will immediately arrest it.

Having laid bare the posterior portion of the rectum, we now proceed entirely to isolate it, first upon one side and then upon the other. This is best done by the finger or by blunt dissection. The inferior mesenteric arteries, one on each side, require careful ligation, as they are large vessels. Having separated it upon the two sides it must next be separated from the structures in front of it. Here considerable care must be used, especially in the male. In Cases III, V, and XIII, for instance, when this separation was effected, the bulbous portion of the corpus spongiosum, the membranous urethra, the prostate and a portion of the bladder were all in sight. In order to avoid danger, especially to the urethra, it is generally wise to insert a bougie in order to warn us of the near presence of the urethra, prostate, and bladder; this is particularly needful if the adhesions of the growth are at all marked. In women the connective tissue between the rectum and the vagina enables us to separate the rectum from the posterior wall of the vagina with relative ease if it be not involved, but very often the growth has involved this tissue and may make the rectum very adherent to the vagina. As already stated, if the wall of the vagina itself is extensively involved, as a general rule it would seem wiser to forego any operation—a rule, however, which the case of Montgomery proves not to be absolute. If the vagina be only moderately involved, as in Case VI, a V-shaped portion, including all the diseased tissue, should be removed and the incision closed by sutures.

Having isolated the rectum at the lower portion, it must be freed upward beyond the growth. Traction will bring a large portion and perhaps the whole growth well into view. In freeing the rectum higher up, care must be taken in two directions: first, that the meso-rectum, when we reach it, shall be divided in such a way as not to interfere with the vascular supply lest the stump should undergo necrosis; second, especially upon the two sides and in front the danger exists of opening the peritoneum. If this can be avoided it is far better to do so, as it diminishes greatly the danger of septic peritonitis. If the growth extends high up, however, it will be necessary to open the peritoneum, and this should then be done purposely. Once it has been opened the bowel should be drawn down far enough to clear the growth by at least an inch and a half or two inches. As soon as the rectum is drawn down to this extent the opening in the peritoneum should be immediately closed by suturing its border to the anterior surface of the rectum. This brings peritoneum in contact with peritoneum and insures an almost immediate closure of the opening in the peritoneum, and so avoids a septic peritonitis. Careful search should now be made for any glands which may be diseased. They lie posterior to the rectum. Every gland which is discovered should be removed.

In all the manipulations to this time it is of great importance if possible not to have

opened the rectum. Sometimes it is so friable from the growth that this cannot be avoided, but where possible it will be easily seen that if we can avoid opening the rectum until after we have closed the peritoneal cavity the danger of septic infection is vastly less. I cannot at all agree with McCosh (*New York Medical Journal*, Sept. 3, 1892), who advises that if the peritoneal cavity has been opened, no attempt be made to close it, but that we shall rely upon packing with iodoform gauze. Suturing as I have described it can be done easily and accurately, and it will protect the peritoneal cavity from a possibly fatal infection far better than by packing with iodoform gauze. The bowel is now divided at a point at least an inch above the growth, the stump being seized with hemostatic forceps, which can be placed at points which will control the arteries, of which there are usually several that bleed. The diseased portion of the rectum is then drawn out and either the entire lower part is amputated or such portion of it is resected as is necessary. If it is perfectly clear from the beginning that an amputation rather than a resection of the rectum must be done, then it is desirable, I think, to begin from the anal end and work upward. Whether we shall work upward or downward will depend upon the exigencies of each case. Campenom (*Centralblatt für Chirurgie*, 1895, 272), Rehn (*Wiener klin. Woch.*, 1894, 249), Byford (*Annals of Surgery*, November, 1896, 631), and Bristow (*Medical News*, Dec. 5, 1896) have also attacked the cancerous rectum through the vagina. Maunsell of Australia (*American Journal of the Medical Sciences*, March, 1892, 245) proposed a new and ingenious method of intestinal anastomosis by invagination through a temporary opening which has been applied to the upper rectum by Hartley (*New York Medical Journal*, Oct. 22, 1892, 464), of which the simple model I show you will give a clear idea. It is only applicable to a few cases of limited growths high up in the rectum or in the adjacent sigmoid flexure, but is there a most valuable method.

As an addendum to the consideration of Kraske's operation for cancer, I may add that it has been utilized in syphilitic stricture of the rectum by Herczl (*Annals of Surgery*, September, 1892, 267) and lately by Higgins (*Boston Medical and Surgical Journal*, May 14, 1896, 485), Elliot (*Medical News*, Oct. 17, 1896, 436), and a few days ago by myself in operating for imperforate rectum.

Temporary Resection.—The methods spoken of thus far have all comprehended the entire removal of a portion of the sacrum and all of the coccyx. A half-dozen different methods have been devised by which the sacrum and coccyx are divided longitudinally, transversely, or obliquely, without separating the flaps of skin from the bone. In other words, an osteoplastic resection, such as we often do in the skull, is made. The advantages claimed for this method are: first, that it restores the integrity of the bones; second, that in women who are operated on before the termination of their child-bearing period the integrity of the pelvic planes is restored by not disturbing the sacro-sciatic ligaments. Sieur (*Arch. Prov. de Chir.*, June, 1896, 333) states that there is but a single case reported (Lihotsky, published by Hochenegg, *Wiener klin. Woch.*, 1889, No. 30) of a woman successfully giving birth to a child after such an operation. Morenstein (quoted by Gerster, *Transactions of the American Surgical Association*, 1895, xiii, 93) narrates, however, a second in which, while the parturition was normal, the woman died of infection from a sacral fistula through the hand of the accoucheur. The birth being normal in both cases, this object seems to me to be of very small moment. I cannot see also the importance or necessity of replacing the temporarily removed sacrum and coccyx. In all the cases in which I have operated that have survived, there has not been a single complaint of inconvenience from the loss of the coccyx and part of the sacrum. Indeed in Case II the restoration to function of the perineum and bones of the pelvis is such that he rides a bicycle, and in Case III the same diversion has been begun, four years after the operation. I cannot, therefore, think that it is important that the bones should be replaced, and it certainly adds to the danger. Union of the bones is not by any means so readily obtained as union of the soft parts, and if the replaced bone becomes infected or necrotic, it adds not a little in my opinion to the danger. I have, therefore, always removed the bone entirely.

Treatment of the Bowel after Amputation.—If the lower end of the rectum has been amputated the only question is, What shall be done with the upper end? I have in most instances simply attached it to the lower end of the resected spine. If no artificial anus has been made, it is essential that the resected end shall fulfil hereafter the function of the anus. We can almost always bring it down to the end of the spine, and I have never had any difficulty in attaching it there.

The objection, of course, to this method is that there being no sphincter, the patient has no control over his motions. This is by no means always the case, though unfortunately it is apt to be one of the disagreeable sequels of such an amputation. To avoid this absence of sphincter Gersuny (*Centralblatt für Chirurgie*, 1893, No. 26) proposed that the end of the bowel should be seized by two forceps and twisted a half or even a whole revolution so as to make an artificial sphincter by the twist. I have twice resorted to this method (Cases VIII and XIII) and have regretted it in each instance. I have not been able to secure the twisted and puckered end of the bowel to the adjacent soft parts so that infection did not take place between the sutures; and though the patients recovered, yet practically the method was worth nothing, or rather was worse than worthless, since it led to the infection Gerster, Marcy and others, however, have had more success and approve of the method. Willems (*Centralblatt für Chirurgie*, 1893, No. 19) has tried to meet the difficulty in another way by carrying the end of the bowel through the fibres of the great gluteal muscle just as in a gastrostomy we utilize the fibres of the rectus so as to make them serve as a sphincter. I have never tried this method.

In case an artificial anus has been made in the colon as a preliminary operation to the radical extirpation, in thinking over the matter I am inclined in my next case to close the lower end of the bowel at the point of section, leaving the artificial anus to serve not only for the escape of the feces from above, but also as an outlet for the small amount of mucus that will gather in the rectum below the artificial anus. In fact, in view of the remarkable results obtained by Obalinski, Eiselsberg, Luhrs (*Centralblatt für Chirurgie*, 1896, 809, 830 and 1007) and others from total exclusion or closure of a large part of the bowel about the caput coli, I have contemplated even the possibility of closing both ends of that part of the rectum below the Maydl operation.

Treatment of the Bowel after Resection.—If sufficient of the anal portion of the rectum is healthy it may be preserved, thus preserving the sphincter intact. Though in the majority of cases this will not be possible, yet in a few it may do very well. In that case the attempt should be made if possible to restore the continuity of the bowel so as to obtain the advantage of the normal sphincter. Circular suture of the two ends has been tried repeatedly, but unfortunately fails from tearing out of the stitches owing largely to the amount of traction upon them; and this giving way of the stitches is followed by infection of the wound or by a fecal fistula. The use of Murphy's button for uniting the two ends has been practiced very rarely and not very successfully. I have tried it but twice. In Case I a septic peritonitis carried off my patient as a result of the secondary operation in which I used the button thirteen months after the first operation. In Case XV the button also proved fatal from sloughing of the bowel. Hochenegg (*Wiener klin. Woch.*, 1889, No. 30) has proposed to solve the difficulty in an ingenious way which my colleague, Professor Montgomery, resorted to some time since in a case, but with an unfortunate result. He seizes the upper end, draws it through the anal end, and attaches the upper end to the skin around the anus. To facilitate adhesion of the upper end to the inner surface of the anal portion the latter would best be deprived of its mucous membrane by thorough curetting or by the scissors. The sutures of course always tear out, but before they have torn out the adhesions are sufficiently strong in some cases to hold the bowel approximately at least in place, and restores the continuity of the lower portion of the digestive tube. If this—which I think is the best solution of the problem—cannot be done, then I prefer to remove the lower portion entirely and attach the end of the rectum to the resected spine or close it as I have above suggested.

The *results* should be considered in three aspects: First, as to immediate mortality; second, as to ultimate cure; third, as to comfort after the operation.

First, *the immediate or primary mortality.*—Sieur (*loc. cit.*) states that the mortality reported by Iversen in 1890 was 57 per cent.; Schede, 25 per cent.; Czerny, 19 per cent.; Albert, 10.9 per cent. Sieur collected in France 95 operations with 37 deaths, a mortality of 38.9 per cent. Of the 37 who died, 11 died from hemorrhage and shock and 18 from septic infection, leaving 8 from other causes.

McCosh in 1892 (*New York Medical Journal*, Sept. 3) collected from seventeen different authors, all German surgeons, excepting Cripps in England (thirty cases) and Kelsey in America (seven cases), a total of 439 cases with 84 deaths, a mortality of 19.1 per cent, which may be taken to represent the average mortality at that time, and probably it is not far from that at present. The mortality of

my own cases of extirpation (I–XV) is 20 per cent.

Secondly, *the ultimate cures.*—McCosh collected from one English and nine German surgeons 375 operations, of whom thirty-two were perfectly well at the end of four years, the limit usually assumed as assuring a permanent cure, to which should be added a certain number of the 375 cases which had not yet reached the four-year limit, some of whom undoubtedly would be permanently cured. Eleven or twelve per cent., therefore, at that time was an approximately correct proportion of absolute cures. I believe it will be found much greater as time goes on.

Of my own fifteen extirpations twelve survived, and four have reached or passed the four-year limit, giving a present percentage of 33⅓ per cent. of permanent cures, and Case XIII has nearly reached the three-year limit without return. Case XIV may survive to or beyond the four-year limit. Had Case I not been operated upon the second time he might have been as fortunate. These cases would still further increase the percentage of recoveries. Even where cure is not effected, just as in cancer of the breast, life is very much longer than is the case after a simple colostomy; probably on the average by eighteen months. It must not be forgotten also that in some cases where a relapse has followed, a second or even a third operation has resulted in permanent cure.

Thirdly, *as to comfort after operation.*—As compared with the damming up of the feces, with its alternate diarrhea and constipation and its dreadful pain, incontinence is preferable. Moreover, a large proportion of the patients do not suffer from incontinence, excepting when they have diarrhea, and if an artificial anus is made after Maydl's method, as several of my patients prove, the comfort is almost absolute. Case II is a gentleman in the first social position, who has traveled along the shores of the Mediterranean and in various social centres of Europe, mingling freely with his friends and acquaintances without many of them even knowing that he has ever had such an operation. He rides a bicycle and is in every respect restored to his normal life.

Case III is another instance of equally perfect restoration to the activities of life. He is a merchant in a neighboring city and comes to Philadelphia in the morning, goes among his business friends making his purchases and attending to his usual business as if nothing had ever happened; and many of his acquaintances also are not aware that he has ever had an operation performed.

The first of these cases is now two months past the four-year limit, the other has just reached the four-year limit.

Case IV, after four years, is hale and hearty and is almost as comfortable as the other two.

Case XI also was able to enjoy an active business life for nearly all of the four years he survived the amputation of the rectum, and died of an intercurrent affection.

Case XIII for two years and ten months has been most comfortable and has no incontinence.

Case I for the year that he lived was able to resume his duties as a clergyman with comfort.

Contraindications to Operation.—I have already referred to the principal contraindications, namely, such extensive adhesions to neighboring organs and their involvement by the cancerous growth that it would be better simply to do a palliative colostomy, and disease too extensive to allow of removal. Besides these, however, there are other contraindications which should not be forgotten which exist in connection with the general state of the patient—*e.g.*, if the patient is too old or is too feeble to withstand the serious shock of a resection or amputation of the rectum (as in Cases XIX, XXII and XXIII). I have never been able to accomplish the operation in less than an hour and a quarter, and sometimes even two hours. In very rare cases somewhat more time may be required to do it. Such an operation, therefore, is a very serious shock and must not be undertaken in persons of such age or general health that they could not withstand it. The general condition of the organs of the chest and abdomen should be considered. Cases of pulmonary trouble, especially of emphysema and bronchitis, should not be operated on if we can spare a reasonable time for the purpose of relieving them of the pulmonary complications. I need not call attention, I am sure, to the necessity of examining the abdominal organs, especially the kidneys, for evidences of Bright's disease or pyelitis, and also all the abdominal organs for possible secondary deposits of cancer, especially in the liver. In women also the breasts, uterus and ovaries should be examined, for if cancer exists in other organs besides the rectum, no prudent surgeon would think of doing an

operation. In case the general health has been broken down by pain, especially the pain caused by rectal obstruction, a patient whose rectum cannot be operated on to-day can occasionally be put in good condition for a later operation by making an inguinal anus to relieve the discomfort and pain. This relief is sometimes so marked that the patient's appetite, sleep and general health improve astonishingly in the course of a few weeks and make a later operation possible. To illustrate the above remarks the following reports are taken from my case-book:

The mortality of the twenty-five cases recorded below is as follows:

SERIES 1.—EXTIRPATION BY KRASKE'S OR KOCHER'S METHOD.

Case I recovered from the operation, but died from septic infection thirteen months later on attempt to reestablish the continuity of the bowel.

Case II survived the operation four years and two months, and had no recurrence during that time.

Case III survived the operation four years, and had no recurrence.

Case IV survived four years and one month, with no recurrence.

Case V recovered; no later history.

Case VI died from shock thirteen hours after operation.

Case VII died from uremia fifty-six hours after operation:

Case VIII recovered; no later history.

Case IX recovered; no later history.

SERIES 2.—EXTIRPATION BY THE PERINEAL ROUTE.

Case X recovered from operation; no later history.

Case XI died four years later from acute diarrhea; no return up to that time.

Case XII recovered; no later history.

Case XIII has survived for two years and ten months without recurrence.

Case XIV is still living, after ten months.

SERIES 3.—EXTIRPATION BY CELIOTOMY AND USE OF MURPHY'S BUTTON.

Case XV died from sloughing of the bowel on the third day after operation.

SERIES 4.—INOPERABLE CASES IN WHICH LUMBAR COLOSTOMY ONLY WAS DONE.

Case XVI recovered from the operation, but died about two years later.

Case XVII died about one year after operation.

Case XVIII died from acute entero-colitis twenty-four days after operation.

SERIES 5.—INOPERABLE CASES IN WHICH INGUINAL COLOSTOMY (MAYDL'S METHOD) WAS DONE.

Case XIX recovered from operation, but died from exhaustion thirty-one days later.

Case XX also died from exhaustion fifteen days after operation.

Case XXI died on the fifth day from exhaustion.

Case XXII recovered; no later history.

Case XXIII died from gangrene of foot resulting from femoral thrombosis thirty-seven days after operation.

Case XXIV died from exhaustion two months after operation.

Case XXV died from exhaustion after surviving the operation nearly three years.

SUMMARY.

Grouping together the various series, it will be seen that in the first three there were fifteen cases in which the growth was extirpated. Of these fifteen, twelve recovered and three died from shock, uremia and sloughing of the bowel respectively.

Of five of the twelve cases, no later history has been obtainable.

Of the other seven, one is living after four years and two months without recurrence; one is living after four years and one month without recurrence; one is living after four years without recurrence; one lived four years and died without recurrence; one is living after two years and ten months without recurrence; one died thirteen months later from septic infection after a second operation; one is living after ten months without recurrence.

This gives at least 33⅓ per cent. of definite cures (four year limit) in the twelve operative recoveries.

Of Series 4 and 5, the inoperable cases in which a lumbar or an inguinal colostomy was done, there were ten cases, of which nine recovered and one died on the fifth day from exhaustion.

Of the nine who recovered, the ultimate history of eight is known: One lived nearly three years; one lived about two years; one lived about one year; and five died in periods of from fifteen days to two months.

Of the whole twenty-five cases, twenty-one made a recovery from the operation and four died, a mortality of sixteen per cent.

THE RELATIVE VALUE OF DIGITALIS IN ORGANIC VALVULAR DISEASE OF THE HEART IN CHILDREN.

By H. A. Hare, M.D.,
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In the treatment of cardiac valvular disease with failure of compensation in children the writer of this article has found that in a certain proportion of cases the use of digitalis does not produce the good effects usually met with when it is given to adults, and he first called attention to this fact and to the value of strophanthus as a substitute for digitalis in children in a short article contributed years ago to the *University Medical Magazine*. While he is not to be understood as doubting the usefulness of digitalis in the heart lesions of children, he believes that it must be given even more guardedly than in the case of the adult, and not commonly fails to do good. This failure seems to depend upon the fact that cardiac arrhythmia develops and signs of auricular distention appear as soon as enough digitalis is given to maintain the improvement desired. To such an extent has this been the case that I have almost entirely given up the use of digitalis in persons under puberty, and resort to strophanthus in heart lesions and alcohol in heart failure resulting from the fevers such as pneumonia. With the object of determining whether other clinicians had reached similar conclusions I sent the following questions to a number of well known physicians interested in pediatrics, and have received the following replies:

1. Have you found that digitalis is as useful a drug in the treatment of cardiac valvular affections in childhood as it is in the same disease in adults?

2. If so, have you noticed that any particular variation in dose or in frequency of administration from that used in adults is necessary to produce good effects?

3. If not, what has been the apparent cause of its failure and what disagreeable symptoms has it caused?

4. What cardiac tonic or stimulants have you found most useful in this class of cases in place of digitalis?

5. Has strophanthus done well in your hands in such patients?

These questions were sent to Dr. L. Emmett Holt, Professor of Diseases of Children in the New York Polyclinic; Dr. J. P. Crozer Griffith, Clinical Professor of Diseases of Children in the University of Pennsylvania; Dr. W. C. Hollopeter, Professor of Diseases of Children in the Medico-Chirurgical College of Philadelphia; Dr. Abraham Jacobi, Clinical Professor of Diseases of Children in the Medical Department of Columbia College; Dr. J. Lewis Smith, Emeritus Professor of Diseases of Children in Bellevue Hospital Medical College; Dr. Reynold W. Wilcox, Professor of Therapeutics in the New York Post-Graduate Medical School; Dr. Frederick Forchheimer, Professor of Diseases of Children in the Medical College of Ohio; Dr. E. E. Graham, Clinical Professor of Diseases of Children in the Jefferson Medical College of Philadelphia.

The answers to Question 1—Have you found that digitalis is as useful a drug in the treatment of cardiac valvular affections in childhood as it is in the same disease in adults?—are as follows:

Dr. L. Emmett Holt thinks digitalis as useful as in adults.

Dr. Griffith agrees with him.

Dr. Hollopeter does not find it as useful.

Dr. Jacobi thinks that children bear digitalis better than do adults.

Dr. Graham replies: "A very useful drug; applicable to more cases than any other one drug; is as useful in children as in adults."

Dr. J. Lewis Smith evidently finds digitalis useful in the heart disease of children, for he says: "I believe it is efficient and safe when given to children over the age of five to six years, but it should not be given oftener than six or eight hours. To children of eight years the dose of the infusion is a teaspoonful, which should be discontinued or given less frequently when the characteristic symptoms begin to occur. Six or eight drops of the tincture may be given in place of the infusion and with an alcoholic stimulant or camphor." Dr. Smith believes that it is a matter of the greatest importance to obtain a leaf of the best quality, and its efficiency is probably most certain when it is given in infusion.

Dr. Wilcox answers us that he has not found it so useful.

Dr. Forchheimer answers "Yes," and adds: "My views as to digitalis in children can be tersely expressed as follows: that it is well borne by them; that the dose, if anything, can be made larger in proportion than in the adult; and that it should *never* be given when compensation is not disturbed. In the disregard of the latter I have found the source

of conflicting statements regarding the utility of digitalis in children as well as in adults."

In answer to Question 2—If so, have you noticed that any particular variation in dose or in frequency of administration from that used in adults is necessary to produce good effects?—

Dr. Holt thinks the use should be rather smaller than of most drugs for the same age.

Dr. Griffith replies that he thinks that children bear it very well. He recommends the same proportionate dose at the same intervals.

Dr. Hollopeter says children will not tolerate digitalis long enough to accomplish any good from its use. He thinks the infusion the most desirable preparation.

Dr. Jacobi uses the infusion, fluid extract, solid extract, and digitalin.

Dr. Graham says: "Best given four times daily; have given it continually for weeks without noticing any ill effects. The same dose does not always produce the same result. I believe this to be due as much to variations in the strength of the drug as to personal idiosyncrasy."

Dr. J. Lewis Smith says: "I think not; similar ill effects may occur in children and in adults. The most common is nausea or a sensation of depression, which may be relieved by alcoholic stimulation or by camphor."

Dr. Wilcox thinks the dose should be smaller than that calculated from age.

Dr. Forchheimer answers, No.

In answer to Question 3—If not, what has been the apparent cause of its failure and what disagreeable symptoms has it caused?—

Dr. Holt has seen no disagreeable symptoms unless excessive doses were used for a prolonged period.

Dr. Griffith does not answer this question.

Dr. Hollopeter says it causes nausea and vomiting if continued for any length of time.

Dr. Graham says: "Digitalis fails to do good in cases of degeneration of heart muscle as in the infectious diseases, in irregularity of heart's action due to nervous excitement in early stage of acute endocarditis."

Dr. Wilcox says the cause is probably due to excessive vasoconstrictor action in children. Its use is limited to rapid irregular pulse and morbid mental nervous congestion irrespective of valvular lesion.

Dr. Forchheimer believes its failures to lie in "mistakes in accurate diagnosis."

To Question 4—What cardiac tonic or stimulants have you found most useful in this class of cases in place of digitalis?—

Dr. Holt has usually combined strychnine with digitalis or used strychnine alone, but does not think it can replace digitalis.

Dr. Griffith has used digitalis chiefly and cannot compare with others, unless strychnine is included, which he has found extremely useful.

Dr. Hollopeter says: "Strychnine, which should be given in the same doses as in the adult (unfortunately the adult dose is only a child's dose), sparteine sulphate, and caffeine citrate." All of these are preferable in his opinion to digitalis.

Dr. Jacobi believes that tincture of strophanthus in the dose of six to twenty-five minims is useful.

Dr. Graham says: "Alcohol in degeneration of heart muscle and infectious diseases, opium and veratrum viride in early acute endocarditis, rest and bromide in nervous excitement."

Dr. J. Lewis Smith replies: I give nux vomica guardedly and cautiously, or strychnine. I prefer, however, the following treatment for a child of eight years if digitalis fails:

> Tincturæ ferri chloridi, f ʒ ij;
> Syrup ananassa sativa (pineapple), f ʒ v.
>
> One teaspoonful every three hours, alternating with:
>
> Spt. æther nitrosi, f ʒ ss;
> Spt. Mindererus, f ʒ iv.
>
> One teaspoonful every three hours.

Dr. Wilcox answers strophanthus and to a less degree sparteine.

Dr. Forchheimer answers strophanthus and strychnine.

To Question 5—Has strophanthus done well in your hands in such patients?—

Dr. Holt thinks strophanthus decidedly inferior to digitalis.

Dr. Griffith has used it little or not at all.

Dr. Hollopeter used strophanthus for years only with disappointment. He has no faith in it.

Dr. Jacobi evidently, from what he says, places it next to digitalis.

Dr. Graham says: "It is a good drug to replace digitalis, but less efficient."

Dr. J. Lewis Smith says: "No, but perhaps a poor quality has been used."

Dr. Wilcox says "Yes."

Dr. Forchheimer has proved strophanthus to act well.

In connection with these reports it is interesting to note the opinion of a number of

well known authors on this subject. In many cases no definite comparative statement is made.

Carmichael says: "As to drugs, iron and digitalis take the first rank. My experience of strophanthus in children is very favorable; in many cases I prefer it to digitalis; it acts more rapidly and is not so liable to produce sickness, and has no cumulative effects." In regard to dilated heart Carmichael says: "Digitalis is also of much service, but probably in a less degree than strophanthus. I have had the best results from this remedy in such cases. It is a pure cardiac tonic, with little or no action on the blood-vessels, as is the case with digitalis. I am in the habit of giving it every eight hours in doses of five to ten drops, in children from six to ten years old."

On the other hand Donkin says, in speaking of acute cardiac disease: "I say nothing special of strophanthus and convallaria, which I seldom use now; for I have found the sickness which digitalis is often accused of causing very rare, if not mythical."

The conclusions then to be drawn from this collection of individual opinions seems to be in favor of digitalis as a cardiac tonic in the valvular cardiac diseases of children, although I still believe that its use should be cautious and that cases will be more frequently met with in which that drug will fail to act satisfactorily than in the adult.

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*CHELIDONIUM MAJUS IN THE TREATMENT OF CANCER.**

By C. D. Spivak, M.D.,

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In the *Vratch* of July 25, 1896, there appeared a communication from Dr. Denissenko, chief of the City Hospital of Bryansk, in which he made the statement that for some time past he has treated all cases of inoperable cancer with *Chelidonium majus*, and that he had obtained encouraging results. He described in detail the methods he used, and begged his colleagues to take up the subject and give the drug a thorough trial. The communication, which was written in an unassuming manner, bearing rather the form of a prayer to his brother practitioners to sustain him in his labors, and the fact that the article was published in the *Vratch*, one of the best medical journals of the world, made his words carry with them the conviction that, at all events, the man is honest even if he errs, and that he by no means seeks notoriety. The news spread like wild-fire, and the medical press of the world gave the item more or less notice. It has even penetrated into the columns of the daily press. Since that time many prominent physicians and surgeons in Russia, Germany and France have experimented with the drug, and communicated their results in the various journals.

I have the honor to present to you a summary of the literature on the subject up to date.

A few words about the drug from a pharmaceutical standpoint. Its synonyms are: Chelidonium, Celandine; Herba Chelidonii, P. G.; Tetterwort, E.; Chélidoine, Herbe a l'hirondelle, Fr.; Schoellkraut, G.; Borodavnik, Chistotyel, Russ.

Description.—Chelidonium majus, Lin., Natural Order Papaveraceæ, is a perennial herb indigenous to Europe, and introduced on this continent. It grows about old houses, waste and rocky places. It is one or two feet high, bears pinnate leaves and small peduncled umbels of yellow flowers, and when wounded emits a yellow opaque juice of a milky consistence, unpleasant odor, and a pungent, acrid taste. It contains besides various extractives and tar-products, chelidonic and chelidoninic acids, two alkaline principles—chelidonine and chelerythrine—and a neutral crystallizable principle, chelidoxanthine. Dr. James Schiels of St. Louis has found chelerythrine to be identical with sanguinarine. Selle (*Archiv der Pharmacie*, 1890) has found three other alkaloids, which he named respectively α-Homochelidonine, β-Homochelidonine, and Protopine.

Tetterwort has been used in folk-medicine for centuries in the form of poultices, infusions, and as the juice. The medical men of some 150 years ago used it in various ailments—scrofulosis, syphilis, eye and skin diseases. It was considered a specific in jaundice and all liver troubles, and is known as *Decoctum ad ictericum* of the Edinburgh Pharmacopœia. The fresh juice is a popular remedy for warts and corns. It is also used as a remedy in phthisis.

Physiological Action.—Introduced hypodermically into a frog, it produces a semi-narcotic state, the reflexes are weakened, the peripheral sense-nerves are dulled, the irritability of the spinal nerves is lowered. Both

*Read before the Denver and Arapahoe Medical Society, March 9, 1897.

the motor and inhibitory centres of the heart become paralyzed. The muscles show no change.

Introduced hypodermically into warm-blooded animals, it produces local irritation, and the temperature rises one or two degrees. Blood-tension is lowered by one-half. Respiration is markedly affected and becomes quicker and deeper. A lethal dose, producing paralysis of respiration, is 0.1 to 0.2 to the pound of body weight.

The microscopic examination of tissues into which chelidonium was introduced hypodermically revealed that the outlines of the individual epithelia become more distinct, the cells smaller, and the protoplasm cloudy.

An aqueous extract is used which should possess the following properties: homogenous liquid, greenish-gray or greenish-brown color, of oily consistence, somewhat acid to taste, and possessing a pleasant odor.

Administered internally the dose is 1.5 in peppermint-water, to be increased to 5.0 in twenty-four hours. When administered externally the parts to be treated are covered with antiseptic gauze saturated in a solution of the extract of chelidonium and distilled water (2 to 1), to be applied once or twice daily. In hypodermic administrations equal parts of chelidonium and distilled water should be used, not more than 1.0 of the solution at a time, and not oftener than once a week.

Its effects are shown after five to seven days of internal medication, in the disappearance of the sallow hue of the skin; the appetite improves, pain is mitigated, the urine is increased in quantity. In from two to three weeks the tumor becomes softer and smooth and diminishes in size.

The external application, wherever the tumor is accessible to such treatment, hastens the process of recovery. It does not affect in any way the healthy tissue, and does not interfere with granulation.

The hypodermic medication was at first administered into the parenchyma of the new growth, but such procedure having in a few cases caused a severe reaction to follow—chill, rise of temperature, acceleration of pulse and fainting spells, which however passed away in from two to five hours—it was therefore abandoned, and the injections are made into the healthy tissue a short distance from the boundary of the neoplasm, which is not followed by any reaction at all. In a few days softening of the tumor sets in; in from fifteen to twenty days a line of demarcation can be distinguished between the morbid and the healthy tissue; the one seems to be forced away from the other, and the whole tumor can sometimes be easily pressed out. In general, the tumor diminishes more than one-half in circumference, and the affected lymphatic glands of the neighborhood undergo involution.

The following cases have been described in literature:

Denissenko: I.—Forty-eight year old male; epithelioma of the lower lip; external application; hypodermic injections twice; cicatrization in forty days. II.—Tumor of lower lip, nature not known, probably epithelioma; hypodermic injection once, drug taken internally daily; cure in thirty days. III.—Fifty-three year old male; carcinoma of the bridge of the nose; four injections; daily applications; cicatrization in one month. IV and V.—Cancer of the esophagus; internal treatment for two months; recovery. VI.—Fifty-four year old male; cancer of the anterior wall of the stomach; internal treatment for ten weeks; no pain; increased in weight; returned to his vocation. VII.—Cancerous tumor on right side of neck; condition of patient pitiable; sick for one and a half years; internal and hypodermic treatment for two months; tumor decreased in size; general health greatly improved.

Zelenski: VIII.—Patient, male, eighty-five years old; for fifteen years suffered from a cancerous growth in left meatus of ear; two hypodermic injections were given, internal and external applications,—all at the same time; half an hour after, severe chills, vomiting, fainting, rise of temperature. Treatment abandoned.

Berezkin: IX.—Cancer of breast, internal; external and hypodermic treatment for two months; no improvement. X.—Cutaneous cancer on back for two years; treatment for one month; no improvement. XI.—Cancer of glands of neck; patient after first injection refused further treatment. XII.—Cancer of parotid gland; no improvement. XIII.—Cancer of tongue; two months' treatment; no improvement. XIV, XV, XVI, and XVII.—Cancer of uterus; no improvement. XVIII.—A case of warty growth; external application eighteen times; no improvement.

Pomerantzeo: XIX.—Cancer of breast; no improvement. XX.—Cancer of inner canthus of eye; no improvement. XXI.—Cancer of lower jaw; no improvement. Duration and mode of treatment in the above three cases not stated.

Kusmin: XXII and XXIII.—Cancer of esophagus. XXIV.—Cancer of stomach. XXV.—Recurrent cancer of breast. Duration and mode of treatment in these three cases not stated. No improvement. XXVI.—Serpiginous ulcer of forehead; cured.

Zarenin: XXVII and XXVIII.—Cancer of breast. XXIX and XXX.—Cancer of uterus. All four cases markedly improved; duration and mode of treatment not stated.

Vasilevski: XXXI to XXXVI.—Gynecological cases; nature of malady, duration and mode of treatment not stated; improved. XXXVII and XXXVIII.—Nature of cases, duration and mode of treatment not stated; not improved.

Fofius: XXXIX.—Cancer of labia majora; no improvement.

Kalabin: XL.—Cancer of uterus; duration and mode of treatment not stated; improvement.

Kelber: XLI.—Thirty-three years old; cancer of uterus, treated for six weeks; improvement. XLII.—Fifty years old; cancer of uterus, treated one month; no improvement. XLIII.—Twenty-seven years old; cancer of uterus, treated five weeks; no improvement. XLIV.—Cancer of uterus; marked improvement.

Denissenko: XLV to LI.—Cancer of breast; improvement. LII.—Cancer of uterus; improvement.

Robinson: LIII.—Fifty year old female; cancer of lower jaw; great improvement.

Poteyenko: LIV.—Forty-nine years old; cancer of uterus, treated sixteen days; no improvement.

Targowla: LV.—Forty-nine years old; cancer of uterus for three years; two months' treatment; great improvement. LVI.—Cancer of stomach; lady seventy years old; one month's treatment; great improvement.

Choladkowski: LVII.—Cancer of esophagus for nine months; could not pass smallest olive sound; internal treatment for two months; recovery as far as difficulty in swallowing and pain was concerned.

Dührsen: LVIII.—Cancer of uterus; no improvement.

Shirshov: LIX.—Cancer of uterus; treatment for six weeks; no improvement.

Spivak: LX.—Patient, male, fifty years old. Carcinoma of stomach; sick for ten months. Tumor occupied the whole anterior surface of stomach, extending below umbilicus. Greatly emaciated, no appetite, constant pain in abdomen, sleeplessness. Commenced treatment with ten drops of fluid extract of chelidonia, which was soon increased to twenty-five drops three times daily. Stomach remained tolerant to the drug. The appetite markedly increased, the pains were allayed, and for hours patient would be free from them. This continued for eighteen days, when he became worse and died. LXI.—Male, forty-eight years old; carcinoma of the stomach, pyloric region. Patient sick for eight months. Cachexia, pain over site of tumor almost constant; appetite poor. Internal administration of chelidonium for three weeks. Showed signs of improvement. Appetite became better, color healthier, tumor did not increase in size and was somewhat softer to the touch.

SUMMARY OF CASES.

Out of the above sixty-one reported cases, thirty-three improved under chelidonium treatment, and twenty-seven showed no improvement, classified as follows:

Carcinoma of uterus (22 cases): Improved, 13; not improved, 9.

Carcinoma of esophagus (5 cases): Improved, 3; not improved, 2.

Carcinoma of breast (12 cases): Improved, 9; not improved, 3.

Carcinoma of stomach (6 cases): Improved, 4; not improved, 2.

There was one case of carcinoma of nose and one of carcinoma of glands of neck, both of which improved under treatment.

Two cases of carcinoma of lower jaw, of which one improved and in the other there was no improvement.

There was one case each of carcinoma of the eye, tongue, parotid gland, labia majora, ear, and back, in neither of which was there observed any improvement.

Two cases of epithelioma of lip; improvement observed in both.

One case of warty growths; no improvement.

One case of serpiginous ulcer; improved.

In two cases the nature of disease was unknown.

There were fourteen observers.

At the meetings of the various medical societies in Russia and Germany many discussions took place in reference to the action of the drug, and many cases were cited *pro* and *contra*, but as no detailed descriptions are given in the reports I did not include them in my paper.

The general sentiment, based upon the favorable cases reported by reputable physicians, and the microscopic examinations of

cancerous tissue made after the injections, is (1) that the drug undoubtedly has some influence upon cancerous tissue which requires further investigation; (2) that the experiments are not numerous enough to warrant any definite conclusions; (3) that the drug being very unstable, many of the unfavorable cases may be attributed to the inefficiency of the preparation; and (4) that probably the technique of the administration is not yet perfected.

LITERATURE.

Vratch, Nos. 30, 34, 40, 42, 44, 45, 46, 48, 1896; and Nos. 1, 3, 1897.

La Presse Médicale, November, 1896.

L'Abeille Médicale, Nov. 21, 1896.

Deutsche Medicinische Wochenschrift, December, 1896.

St. Petersburger Medicinische Wochenschrift, Nov. 23, 1896.

DENVER, COLORADO.

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*A REPORT OF FOUR CASES SIMULATING STONE IN THE KIDNEY FOR WHICH NEPHROTOMY WAS PERFORMED; NO STONE FOUND; OPERATION FOLLOWED BY DISAPPEARANCE OF ALL SYMPTOMS.**

BY ORVILLE HOWITZ, M.D.,

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In four cases in whom I performed the operation of nephrotomy for a condition that simulated stone in the kidney, a most careful exploration of the kidney by palpation and puncture by means of the needle was made, and in two of the cases incision into the organ itself, yet no stone was found. These patients have all recovered their normal condition and health, and the anomalous symptoms for which the operation was performed have all disappeared.

The first individual was operated upon one and a half years ago; he was twenty-eight years of age, a blacksmith by occupation. He always enjoyed good health up to within eight months prior to his first visit to the Jefferson Hospital, when he began to suffer from a dull aching pain in the lumbar region, paroxysmal in character. At times the pain would extend along the course of the ureter into the testicles; it was increased by exertion and pressure. Palpation proved the kidney to be in its proper position, normal in size, but there was tenderness on pressure. The patient stated that he never had any venereal disease, and on examining the urethra and bladder they were found to be healthy. The urine was normal in quantity; it was high-colored, and the alkaline tide, which should appear about three hours after partaking of a meal, was absent; it contained two per cent. of urea, and its specific gravity was 10.18, with uric acid in excess and albumen. Under the microscope epithelial cells and a few blood-corpuscles were detected. No pus could be found.

When the pain extended into the testicle the patient often suffered from frequent desire to micturate. The pain had become so constant that he was unable to pursue his occupation. He had been under the care of numerous physicians without relief. From the history of the case and the examination of the urine it was presumed that he was suffering from a stone in the right kidney, and an exploratory operation was performed. No stone was found. The patient left the institution on the fourteenth day after the operation, the pain having completely disappeared. He states that he has been in perfect health ever since.

The second case was brought to me by Dr. Harris, of Wilmington, and was operated upon before the class in May last. At that time he gave the following history: He was forty-five years of age, a laborer by occupation; had enjoyed perfect health up to two years previous to his admission to the hospital, at which time he began to suffer from pain in the small of the back, on the left side, which would at times extend to the testicle. At first the pain was paroxysmal in character; it would be severe for several hours, then gradually subside and finally disappear; it would remain absent for two or three weeks, only to return with renewed force. As time went on the attacks became more frequent; the intervals between the remissions gradually shortened, until at the time of his admission it was almost constantly present. Sometimes the severe attacks of pain were associated with slight nausea. His urine at times was thick, especially after a severe paroxysmal pain. Had never passed a calculus, nor blood. Lately he had been losing in strength, and the pain prevented him following his occupation. Hitherto the numerous remedies prescribed failed to bring relief.

There was no venereal history. On examination the urethra, prostate and bladder were found to be normal; the left kidney was in its proper position, but sensitive to the touch.

*Read before the Surgical Section of the College of Physicians of Philadelphia.

The specific gravity of the urine was 10.20; it contained two per cent. of urea and the phosphates were present in excess. The microscope showed the presence of epithelial cells, blood-corpuscles, but no pus.

The method of operation in this case was that recommended by Edebohls. The kidney was easily delivered, but great was the disappointment when no stone could be discovered, either by ocular inspection, manipulation, or multiple puncture with the needle. I was so confident that a stone was present that I was unwilling to restore the kidney to its normal position without a most thorough examination, knowing that a calculus of small size might easily escape the most careful search, unless indeed the kidney was opened. Accordingly an incision was made along the posterior border of the organ, large enough to admit of the entrance of the index finger and allow me to examine the calyces. No stone could be found. During the incision into the substance of the kidney an assistant grasped the pelvis, with the blood-vessels between his index finger and thumb, thus preventing the usual free bleeding which follows this procedure.

The wound in the kidney was packed with iodoform gauze, a drainage tube inserted, and the skin and muscles closed by means of interrupted silkworm-gut sutures. The patient made a quick and rapid recovery, and has had no reappearance of his troublesome symptoms since the operation. He is to-day in perfect health.

The third patient, whom I operated upon two years ago, was afflicted with a fistulous opening in the left lumbar region, which led to the kidney, through which all the urine eliminated by the organ on that side was discharged. The skin of the back was excoriated, consequent upon being constantly bathed in urine. He was much below par and was gradually losing health and strength.

Five years before coming under my care he was operated upon by the late Professor Agnew for a large perinephritic abscess with stone in the left kidney. To empty the abscess properly it became necessary to keep the drainage tube *in situ* for a long period, and its removal was followed by a fistulous opening which refused to heal. Every surgeon by whom he was seen since the operation advised nephrectomy. I suggested an exploratory operation in order to examine the local condition, and to save the kidney if possible. The patient consented; and the kidney was exposed in the usual manner. In the body of the organ a fistulous opening was discovered large enough to admit the index finger, and a long tract was found extending down into the pelvis, being apparently the remains of the perinephritic abscess. The tract was scraped by a curette and the cicatricial tissue surrounding the sinus in the kidney was cut away by means of a small bistoury. The wound was packed with iodoform gauze and dressed in the usual manner. To my surprise it began gradually to granulate and closed entirely in about three months. It has remained so ever since.

For two years the patient had been suffering with all the symptoms of stone in the right kidney. As it is not very unusual for renal calculi to be found in both kidneys a second operation was advised, but such was the individual's dread of having a similar experience with his right to that which he had undergone with his left side that he refused all surgical interference. Medical treatment had been fairly tried, but brought no relief.

When his left side healed up his confidence was restored, and he permitted me to make an exploratory nephrotomy on the right kidney; the organ was exposed by the Edebohls method, and the kidney structure incised so that a digital examination could be thoroughly made, but no stone was found. On convalescing, the pain from which the patient had suffered had completely disappeared, and within a year he had gained forty-five pounds and enjoyed good health.

The last of this interesting group of cases was that of a young man kindly sent to me by Dr. Hirst, of Camden, upon whom I operated four months ago, no stone being found. His history is briefly as follows: He had never had any venereal disease, and was in perfect health up to two years before, when he began to suffer from attacks of pain in the right lumbar region. The pain would at times descend into the right groin and testicle; finally he suffered from a constant pain in the back, especially on the right side, which was increased on exertion. When the pain descended to the testicle that organ became markedly retracted, and there was attendant slight nausea. The urethra, bladder and prostate were in a normal condition; the urine contained epithelial cells, with a slight number of blood-corpuscles, and albumen. Since the operation he has gained in weight and his pain has completely disappeared.

The questions naturally asked when discussing these four cases, where every symp-

tom of stone existed except the voiding of renal calculi, and where no stone was found on exploring the kidney, are: What are the reasons for the patient's suffering? And why after recovery from the operation was there permanent and entire cessation of all the symptoms for which the operation was undertaken?

The only way in which I can answer these queries is to offer an explanation which has already been suggested. It has been surmised that probably the kidney on the side affected is somewhat more movable than it should be, yet to so slight an extent as to be impossible of detection by manipulation. By some means or other the kidney becomes slightly misplaced and thus temporarily the ureter becomes bent upon itself, blocking up and preventing the flow of urine; thus there is a distention of the pelvis of the kidney which probably gives rise to the pain. The frequent distention of the pelvis with urine owing to the blocking of the ureter might in time light up a slight pyelitis, which would likewise account for the presence of epithelial, blood- and pus-corpuscles in the urine. The operative procedure necessary to examine the kidney is followed by more or less adhesive inflammation and the formation of cicatricial tissue around the kidney, which tends to hold it in place and thus prevent any further kinking of the ureter.

Many operators have had an experience similar to mine, hence it should not be a subject of annoyance if the surgeon have a patient who presents all the symptoms of calculus in the kidney and when the operation of nephrotomy is performed no stone is found, for experience seems to show that even if the stone is absent the symptoms calling for the operation will all disappear, and the patient will be restored to health.

The method of operation first described by Edebohls is recommended, not only because it permits of a better ocular and manual examination of the kidney, but if it should be necessary to incise the organ it can be done without loss of any appreciable quantity of blood.

In conclusion I offer this suggestion: Never be satisfied that a stone is not present until you have had a chance to make an ocular inspection of the kidney. Very recently I assisted an operator in a case of this kind which has made a deep impression upon me. The patient had every symptom of stone in the kidney; nephrotomy was performed by means of the old oblique incision; multiple punctures by a needle were made; but no stone could be detected. The patient recovered from the operation and returned home. Six months later he again came under the surgeon's care, suffering from the same symptoms, but greatly intensified. The operator decided to expose the kidney once more, and endeavor to discover the cause of pain; failing to do this he had determined to remove the organ. The old wound was reopened, manipulation and puncture by means of a needle were again resorted to, but no calculus could be detected. The wound was enlarged and the kidney separated from the adhesions and made ready for ligation of the pedicle, preparatory to removal. On bringing the organ out of the wound and turning it over a small stone was found at the under and lower border of the kidney in its substance. This was removed, and the patient made an excellent recovery.

In a paper recently read before the Medical Society of London, by Mr. Reginald Harrison, he reports three cases of his own and two of Newman's, of Glasgow, whose symptoms were somewhat similar to those recounted in the preceding cases. In the first case the patient had suffered from an attack of scarlet fever three weeks previously. The symptoms were those of intense pain in the loin, the urine containing albumen and pus. Nephrotomy was performed and the kidney structure incised, and nothing found, the albumen gradually and completely disappearing. The second case was one of nephritis from exposure to cold and damp; there was great pain in the right lumbar region; urine loaded with albumen. An operation was followed by the disappearance of all morbid symptoms. In the third case the patient had passed a small calculus, and there was great pain in the region of the left kidney which, on palpation, was found to be swollen and tense. It was opened and explored; no stone could be discovered. The patient made a complete recovery and the albumen completely disappeared. Newman's two cases were those of movable kidneys with a kinking of the ureter, leading to hydronephrosis; there were albuminuria and tube-casts in the urine—all of which completely disappeared after nephrotomy.

The cases reported by Newman are similar to those recited by myself, whilst those that came under Mr. Harrison's care were a form of albuminuria due to kidney tension, and were relieved by renipuncture. In his paper on the subject Mr. Harrison calls attention

to the fact that where albuminuria is due to renal tension, though both kidneys be similarly involved, it is unnecessary to operate upon both organs as the sympathy which exists between the two glands is such as to cause an impression upon one to be reflected upon the other. Relief afforded to one kidney, as his cases would seem to illustrate, usually assists the other; whilst, as is well known, when the secretion on one side is suspended or arrested the opposite organ speedily takes up the whole of the work.

THE ADVANTAGES OF RESIDENCE BY THE SEASIDE.

By Wm. Edgar Darnall, M.D.,
Atlantic City, N. J.

Atlantic City has justly earned a world-wide reputation as a winter and summer health resort. Its autumn climate entitles it to perhaps as much if not more consideration as a resort for invalids during the fall months. The sanitation of this populous resort is always in a good condition, because under the careful supervision of an excellent Board of Health it is kept up to the standard throughout the year. The city is always clean, and strict vigilance is maintained day in and day out by the authorities. Such even pace is kept with the large crowds who frequent the place, that the day after they leave the city is as clean as it was before they came. The streets are constantly scraped, and all refuse is collected and carried off by garbage-carts as fast as it accumulates. Swill-barrels are emptied with regularity, daily trips are made the year through to the garbage depot, and everything collected by this systematic process is consumed by fire. The sewerage also represents the best system known to hygiene.

Every effort has been expended by the authorities to furnish the city an adequate and at the same time pure water-supply; they have succeeded admirably in this. Bad water is the bane of many resorts, but Atlantic City can boast of as pure water as may be found anywhere; this is obtained from springs and artesian wells. These latter are sunk from 750 feet to 1400 feet below the surface.

Geologically the island on which this city by the sea is built is composed of a superficial layer of sand some six hundred feet in thickness; underlying this is a stratum of clay, which in turn lies upon a marl layer. This marl is peculiar in its formation, being composed almost entirely of a shell concrete. This stratum crops out in many places along the Atlantic coast, and is the same that forms the well known marl beds of North Carolina and Virginia. Underneath this shell-layer lies a bed of gravel; it is from this latter that the artesian supply is furnished, and these streams of pure and limpid water are beyond even a suspicion of pollution.

There are many things that go to make the autumn in most localities peculiarly a breeder of certain infectious diseases, such as diphtheria, malaria, typhoid and other fevers. In a large number of these cases the infection may be traced directly to the drinking water.

Nature has selected this season of the year to put off her garment of green and prepare herself for the ermine cloak of winter. Decaying vegetation is therefore abundant and provides an excellent medium for the growth and development of certain deleterious organisms. The heavy rains of this period, drenching the soil, easily bear these organisms to the water-supply unless great care is exercised. In addition to this, cooler nights with warm days effect a greater atmospheric precipitation, and the percentage of dew formation is increased. Bacteriological investigation teaches us that just this kind of fluctuation between the damp and the dry, with a sufficient degree of heat—and this is provided by the balmy days of this period—furnish the most propitious condition for the propagation of germ life. Thus we have in the autumn almost ideal surroundings for the growth of bacteria, and often an easy channel by means of surface drainage through which the water-supply becomes polluted.

The question may well be asked, then, Why is it that this city of 23,000 inhabitants, often accommodating 150,000 to 175,000 summer visitors at a time, is so free from infectious diseases of all kinds, and when sporadic cases do occur the infectious process is so easily stamped out, while in other places ruthless epidemics mow down their victims? This question is not difficult to answer when the facts are known. Two factors are especially important: (*a*) an abundance of sea air highly charged with ozone; (*b*) a porous, sandy soil, with scant vegetation.

As referred to above, the bacteria require for their propagation warmth, moisture, and a suitable pabulum. The decay of vegetable matter furnishes this pabulum; but as very little vegetation grows upon the sandy soil

of Atlantic City there is little decay, and the germ starves for want of the food necessary to its existence.

Again, whatever moisture the ground receives soon percolates through the sand, leaving the already enfeebled bacterium—struggling for existence and in want of water—high and dry and thirsty. An ocean breeze, highly ozonized, perhaps now sweeps down upon its defenseless condition. Oxygen and germ life are deadly enemies. The latter is too much weakened to resist; it quickly succumbs, and its innocuous life-history is ended. It is clear therefore that such climatic conditions as these do not present the most salubrious surroundings for the proliferation of these deleterious organisms.

Nature has supplied Atlantic City with her most potent antiseptic—plenty of pure ocean air; while the wisdom and artifice of man have given her the rest—pure water, excellent sewerage, and careful sanitation. This condition of natural antisepsis under which the people live, along with what hygiene has accomplished, makes the very climate to a great extent prophylactic against infectious diseases. Of course such diseases now and then crop out. Sporadic cases may occur anywhere; no place is entirely free from them. It frequently happens in these cases that the patient has been infected before leaving home, but the disease does not develop itself until he has been here for a few days. Epidemics, however, are entirely unheard of.

The practical immunity of this climate from malaria makes its autumnal period especially advantageous to that class of chronic cases whose susceptibility to paludism causes them to dread the periodical attack of malaria they are accustomed to have at this season. A short stay here frequently allows them to escape the attack altogether.

Much relief is also experienced by sufferers from autumnal catarrh, or hay fever. It is probable that the small amount of flowering vegetation, along with plenty of good wholesome air, are important factors in affording them relief from this distressing disease.

Nor can better tonic treatment be recommended to neurasthenics, anemics, and convalescents from surgical operations or exhausting zymotic diseases than a short stay at the seaside. The bracing air makes exercise a pleasure to the enfeebled and gives them energy; deeper breathing is encouraged; the appetite improves; the system is thoroughly invigorated. Roses soon tint the blanched cheek of the invalid; new life infuses every vein; and the consciousness of returning strength inspires new hope and courage to the depressed.

In autumn the natural beauty of the scenery is enhanced. Autumn brings in its train beautiful balmy days with glorious sunsets. The sun sends down its rays in long, slanting pencils of light to the water, and the water spreads itself out in variegated, ever-changing tints of green, purple, pink, and amber. The temperature is delightful—neither too cool nor too warm. The dreamy period of Indian summer prolongs these delights far into winter, until it has robbed it of half its rigor.

The accommodations of elegantly equipped hotels surround hotel life with all that is desired by invalidism in the way of personal comfort. Perfect quiet and freedom from excitement may be obtained as easily as at home, for the tide of the summer's rush has ebbed, and the restless, eager sea of human faces has given place to quiet and calm.

Congenial surroundings and pleasant things for the mind to dwell upon are indispensable to the rapid upbuilding of the invalid. For this reason every practitioner recognizes the value of an occasional "change" of scenes and faces for his patient. It is a diversion for the mind. Just those moral surroundings so needful to the recuperation of convalescents are furnished by this climate.

After the rush of August a genial air of relaxation pervades everything. The pleasant temperature is grateful to the sick one. The water presents its fairest charms, bathing is good till October, and the peaceful, restful scenery affords food for healthy meditation. Returning strength begets new courage; returning health inspires new interest in life; and the patient, who perhaps has been brought low by disease, is restored to his friends a well man.

THE TECHNIQUE OF PROFESSOR KEEN'S SURGICAL CLINIC IN THE JEFFERSON MEDICAL COLLEGE HOSPITAL.

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[*Continued from page 164.*]

On arriving at the hospital the surgeon and assistants remove their coats and waistcoats in the surgeon's private room, roll up

their sleeves above the elbows, and put on freshly laundered white linen coats with short sleeves. The surgeon enters the clinic and scrubs his hands and forearms with pyoktanin-ethereal soap, or with green soap, and a brush for at least five minutes. This primary cleansing is done before the students at each clinic as an object lesson to them. Having dried the hands, the nails, which are always kept reasonably short and evenly trimmed, are thoroughly cleansed with the ivory instrument made for this purpose, or with the blunt-pointed orangewood sticks with which the clinic is supplied. The hands and forearms are bathed in alcohol and finally scrubbed with a sterile brush in the bichloride of mercury solution 1:1000. The surgeon puts on a long rubber apron, and over this he wears the linen operating gown, the loose sleeves of which are drawn above the elbows and tied snugly with tapes.

The assistants, who have previously disinfected their hands in a similar way, in the meantime see to the immediate preparations for operation.

The assistant who will have charge of the instruments refers to a Keen "Instrument Blank," and selects from the instruments in the racks those necessary for the operation to be performed. These are wrapped in pieces of gauze to facilitate their handling and put into the Schimmelbusch sterilizer, where they are boiled thirty minutes, one per cent. of soda being added to the water to prevent their rusting. Paired instruments are separated before boiling; cutting instruments are separately enveloped in cotton to retain their sharp edge; needles are wrapped in a separate piece of gauze. Two all-metal hypodermic syringes are boiled at the same time, for the anesthetist's use. If the operation be on an extremity, the Esmarch apparatus is immersed in a five-per-cent. carbolic solution and remains in this solution until needed. The sterilized trays are placed in position on the glass tables for holding the instruments after they are boiled, and hot sterilized water is poured in the trays, which are covered over with towels.

The assistant in charge of the ligatures and sutures immerses the jars containing these in mercuric chloride solution 1:1000, removes the tops, and lifts from each with a sterilized tenaculum the necessary quantity of catgut (wound in rings) and drops it into sterilized bowls containing absolute alcohol. The ligatures are cut into twelve-inch lengths, the quantity being estimated for the kind of operation to be performed. Spools of silk are likewise emptied from their separate tubes into sterilized bowls containing absolute alcohol; silkworm-gut and kangaroo tendon remain in their respective jars until needed.

The clinic nurse and her assistant, having disinfected their hands, cover the tables with sterilized sheets and arrange the jars on them properly and make up the different solutions.

At the beginning of the clinic the patients from the last clinic are brought in from the wards, on rolling beds, and brief remarks made upon the progress of each case; the wounds are dressed before the students so that they can note and keep in touch with the proper methods of dressing cases. The result of the pathologist's examination in the case is also read to the class, and while this is transpiring the chief clinical assistant inspects the preparations and sees that everything is in perfect readiness for operation.

The *anesthetic* is administered in a room apart from the clinic in order that the disturbance to the patient's nervous equilibrium, which would be brought about by bringing him while still conscious before a large body of students, may be avoided, and that he be spared the sight of the immediate preparations for operation and the necessary display of instruments. Occasionally the anesthetic is administered before the class for the purpose of instruction. The administration of the ether (which is commonly used for anesthesia) is not commenced until all the preparations in the clinic are nearly completed and the surgeon is ready to proceed with the operation; the practice of anesthetizing the patient before preparations for the operation are completed, and sustaining the anesthesia until the surgeon is ready to proceed, is discountenanced.

In order that the intervention of the operator will not be necessary during the process of anesthesia, should the patient show signs of failing heart or respiration, a skilled and trustworthy assistant is selected to give the anesthetic, who is competent to act in case of emergency. The anesthetist's whole attention is devoted to the administration of the drug, and he is not allowed to watch the operation.

For administering ether the form of inhaler devised by Dr. Allis is used on account of its simplicity, lightness, and efficiency. For chloroform the Esmarch inhaler is used, except as described below. The anesthetist uses a bottle graduated in centimeters and

having a Tweed dropper. Squibb's ether and chloroform are invariably used. The anesthetist is also supplied with mouth-gag and tongue forceps. An assistant has charge of the hypodermic syringe, which has been tested beforehand to see that it is in working order, and brandy and solutions of strychnine, atropine and digitalis are placed on a small table within reach.

Before exhibiting the anesthetic the anesthetist examines carefully the heart and lungs, loosens any constriction around the neck, chest or waist, and inspects the mouth to see that it contains no false teeth or other foreign body, as tobacco. The patient's statement is not accepted in this matter, but personal inspection is necessary, for it is quite common for patients to deny the presence of false teeth.

While heart disease is not considered a positive contraindication to the administration of an anesthetic, its presence makes the anesthetist more wary, and in valvular lesion the administration will be made with especial care. The heart-beat usually improves under the judicious administration of ether. It is true that anesthetics are highly dangerous in people with fatty hearts, but the shock of operation without anesthesia is equally or even more dangerous, and the surgeon has the choice of the lesser of two evils. The presence of extensive capillary bronchitis also offers a more or less serious drawback to administering the anesthetic, as the amount of mucus secreted may cause asphyxia, and the least amount of the anesthetic is given that is capable of producing the desired effect. In these cases chloroform is generally used by preference, and if care is taken in the administration there is seldom any serious result.

The urinary report is examined beforehand to ascertain the condition of the kidneys; the presence of albumen and casts in the urine, while not contraindicating operation, make the peril of anesthesia greater, and certain dangers are to be watched for and guarded against. But while in these pathological conditions of heart, lungs and kidneys there is more danger than where these complications do not exist, there is really no condition of these organs, as Hearn has clearly proved, that offers a positive contraindication to the use of an anesthetic in a case requiring surgical interference.

Inquiry is made as to the patient's habits, whether he be addicted to the use of alcohol or not. Alcoholic patients are peculiarly liable to congestions, and pass through the exciting stage of anesthesia with considerable struggling. These cases are usually given a hypodermic injection of morphine a short time before leaving the ward to aid in bringing about insensibility with very little of the anesthetic.

Ether is the drug commonly used for anesthetizing in the clinic, as it is less dangerous in general cases, though it is not as agreeable to take and slower in action than chloroform. However, the sudden and alarming syncope which chloroform induces occasionally may come on so rapidly that it may prove fatal almost before an attempt can be made to revive the patient, and it is for this reason that it is not more generally employed. As Hare has shown by experiment, chloroform may kill by paralysis of the vasomotor and respiratory centres as well as of the heart, whereas ether acts fatally through the respiration alone, the heart rarely being affected. In case of alarming symptoms from ether there is usually sufficient time to undertake means of resuscitation which are likely to be of avail. Practically the only cases in which chloroform is selected are those in which there is profuse bronchial secretion or advanced kidney disease, and in operations on the mouth and nose, where it is administered on a pledget of cotton held in a forceps so as to interfere as little as possible with the movements of the operator.

Having ascertained the condition of his patient the anesthetist assures him there is no danger, and the patient being recumbent the dry inhaler is placed over his face, letting him take several respirations to gain confidence. He is instructed to take deep inspirations and not to expel the air too rapidly. This method of breathing allays to a certain extent the supersensitiveness of the bronchial mucous membrane, and the ether is received more kindly and is not apt to produce coughing. Only a few drops of ether are poured in the inhaler at first; this is repeated every few minutes, the anesthetist giving the patient time to become accustomed to the vapor and to acquire confidence, and encouraging him to take it quietly and not to be alarmed. A little patience exercised at the outset proves a saving of time and trouble in securing the desired effects, and the result is a much more satisfactory anesthesia, with less shock than where the ether is crowded and force is used to restrain the struggles of the patient.

As soon as the patient is fully under the

influence of the anesthetic he is wheeled on the rolling table, on which he was etherized, to the operating arena, where he is lifted to the operating table.

While the operation is in progress certain *complications* of the anesthetic state are liable to arise which must be met and treated the moment they occur. Of these, vomiting is the most common, and while it is disagreeable to the operator, particularly if he be operating about the face or performing a celiotomy—the vomitus being liable to infect the wound in the former case, and the rigid muscles from straining interfering in the latter—the danger lies in the fact that a part of the vomitus may pass the glottis and enter the trachea. The local anesthesia of the parts interferes with the usual guarding of the passageway to the lungs, and the patient may become asphyxiated from particles of food lodging in the trachea or bronchi. The necessary precaution is taken to guard against this occurrence by withholding food for at least five hours before operation. The anesthetist knows that his patient's stomach is empty, so has nothing to fear from this source, for should some of the vomited matter enter the patient's trachea, being nothing but a thin frothy mucus, it can do no damage to the mucous surface; the principal harm is that it interferes with the progress of the operation and causes much cardiac depression if long continued. Vomiting is usually due to incomplete anesthesia, the admixture of too much air with the vapor. The patient's head is lowered and extended and turned to one side, so the material may be drained off in a towel and the anesthetic persistently administered until vomiting ceases and complete relaxation occurs.

Bronchorrhea may be a distressing complication to the administration of the anesthetic, inasmuch as the free secretion in the bronchi and bronchioles may interfere with thoroughly anesthetizing the patient, and the patient is more prone to nausea from swallowing much of the mucus which is heavily soaked with ether. Bronchorrhea usually occurs during the earlier stages of anesthesia, and if judicious care is taken not to force the ether from the start the mucus secreted will usually not be of an amount sufficient to cause any distressing symptoms. When it occurs the patient's head is turned to the side and the mouth wiped frequently with a small gauze sponge in a sponge-holder to get rid of the accumulation.

Cyanosis in greater or less degree may occur in the early stages of anesthesia, just before the stage of relaxation or later in the progress of the anesthetic. In the former case it usually occurs where bronchorrhea is profuse, and if the cyanosis be only slight the ether is continued until the patient is relaxed, and the bronchial secretion is drained off as rapidly as possible by wiping out the mouth frequently with a gauze sponge. If the cyanosis becomes marked, however, and the trained eye of the anesthetist recognizes an alarming condition, the ether is suspended and efforts made to revive the patient. During the progress of the anesthesia cyanosis may come on from closure of the epiglottis or "swallowing the tongue." When the condition becomes alarming the inhaler is removed, the patient's head is brought over the edge of the table and forcibly pressed backwards. This maneuver lifts the hyoid bone and with it the epiglottis. Cold water is at the same time dashed on the face with a towel. Should this not suffice the mouth-gag is fixed in position and the tongue pulled forward, rhythmical traction being made by means of a forceps with a prong on one blade which transfixes the tongue; this does far less injury to the tongue than forceps which act only by pressure. The throat is cleansed of mucus and the epiglottis lifted by pressing forward the base of the tongue with a blunt instrument or the finger. Artificial respiration by Sylvester's method is rarely necessary. Hypodermics of strychnine, atropine, digitalis or brandy may be necessary for a failing pulse or shallow respiration.

When it is deemed more advisable to use chloroform for anesthesia the Esmarch inhaler is generally used, but where operations on the mouth demand all available space and light after the patient is fully anesthetized, it is administered on a pledget of cotton clamped in a forceps. The cotton is held several inches above the mouth so that the chloroform vapor will be well mixed with air. The lips and nose are smeared with cosmoline to prevent blistering, and the utmost precaution is taken to anticipate syncope. Should this occur, means to counteract it are instantly taken. The chloroform is suspended, the head is lowered and thrown back, and the tongue drawn rhythmically forward, and if this does not suffice artificial respiration is practiced at once without waiting for the breathing to cease. An assistant gives a hypodermic injection of ammonia, followed by $\frac{1}{10}$ of a grain of strychnine sulphate. The artificial respiration is kept

up for some time to urge the blood through the heart, and hypodermics of brandy and strychnine repeated at short intervals until improvement occurs. The writer has given thirteen hypodermic injections of strychnine of $\frac{1}{20}$ of a grain each within two hours in such a case before the heart finally regained its accustomed beat. There were no ill after-effects from the cumulative action of the drug.

If necessary, faradism is used over the phrenic nerve (one pole over the epigastrium, the other over the course of the phrenic at the root of the neck) and mustard applied over the heart and cervical spine. Such procedures are rarely called for, however, if the drug be administered very slowly and plenty of air be mixed with the vapor. The writer has seen but two instances in which active measures were demanded to resuscitate the patient while chloroform was being administered, during a period of seven years in the Jefferson Clinic. Both of these recovered, the operation being temporarily suspended in each case. In one of the cases it was necessary to completely invert the patient, holding him up by the legs and compressing the abdomen rhythmically (which Hill has shown to be the best means of resuscitation) until the circulation was re-established and he showed signs of returning respiration. Such extreme procedures are fortunately, however, rarely demanded.

The Operation.—In the selection of a typical case for description of operative technique as practiced in the clinic we have a wide choice. The region of the neck, with the variety of tumors and cysts that are liable to be found here, is probably invaded as often as any other part of the body. Most of these growths are of glandular origin, and many of them are malignant, so the case before us, we will then suppose, is a lympho-sarcoma of the neck which has not yet assumed such proportions or invaded the tissues so extensively as to make operative measures unjustifiable.

The fully anesthetized patient, having been lifted to the operating table, is covered with warm woolen blankets, the edges being tucked under his back to reduce as far as possible the loss of body heat, and if necessary he is surrounded by hot-water bottles to supply by artificial means enough heat to make up the deficiency of the amount that may be lost. This will greatly lessen the subsequent shock which often follows a prolonged dissection. The temperature of the room is kept at a reasonably comfortable mark, and drafts are avoided. To prevent his becoming chilled from the solutions these are always used quite warm and the table is placed in a slight Trendelenburg position, the foot being raised about three or four inches above the level of the head, so that all fluids run towards the head. This avoids wetting the blankets and other clothing and is insisted upon by Professor Keen in all operations on the head, neck and breast as a minor but important point in the technique.

The dressings are then removed and the face, neck, chest and arms to the elbows are scrubbed with soap and water, rinsed off with water and dried, and washed with alcohol. For this scrubbing a special brush reserved for the patient is used. A sterilized sheet is thrown over him, with the ends hanging over the sides and foot of the table, and fastened over his shoulders. The head is encircled with a sterilized towel, covering all the hair, and a sand pillow wrapped in a sterilized towel is placed under the shoulders to raise them and allow the head to drop backward. A sterilized towel is wrapped around the inhaler. The operative area is finally scrubbed with solution of bichloride of mercury 1:1000, care being taken that none enters the eyes or nasal and buccal cavities; and after plugging the external ears with sterilized cotton the part is ready for operation.

Notwithstanding these painstaking efforts at repeated cleansings, the staphylococci *epidermidis albi* are still found in the deeper layers of the cuticle, their accustomed habitat, but as they rarely show any tendency to pathogenesis and have never more than a local significance the rôle they play in the future proceedings is usually only one of slight importance.

The two immediate assistants, both of whom wear sterilized operating gowns so as to have perfect aseptic relations with the surroundings, take their proper positions at the table, the chief assistant to the operator's right, the second assistant opposite him. The assistant in charge of the instruments having removed them from the sterilizer and laid them in trays containing sterile water, selects a sharp scalpel and dissecting forceps, which he hands to the operator, and clamps a dozen or more hemostatic forceps to the sterilized sheet covering the patient, where they can easily be reached by the assistants. Fastening the forceps in this way to the sheet prevents their falling on the floor. A basin full of dry gauze sponges stands on a table within easy reach. The fourth assistant busies him-

self with the ligatures and sutures, cutting them into proper lengths, and threads the needles. Two nurses with aseptic hands look after the solutions, which they change frequently, and hand sponges, dressings, etc., when needed.

The patient's head is turned to one side and held firmly by the anesthetist, sterile gauze pads are pushed back of the neck on each side to absorb blood, and the operation is begun by making a free incision over the growth in the line of the sterno-cleido mastoid. After the platysma and fascia are divided the deep fascia is opened the whole length of the incision. The veins that are encountered in these superficial dissections are clamped and divided. The sterno-cleido will usually be found adherent to the growth and stretched over it. From now on the dissection will often be most difficult and tedious, and demands the exercise of the highest qualities of a capable surgeon. There is probably no other procedure in the category of surgical operations that is more difficult to perform, more serious in its demands, dealing with so infinite a variety of perverted relations. The growth is apt to be fixed on all sides by adhesions which are not readily separated, and the topography of the part is wholly altered.

When the anterior surface of the growth is reached, the next step is to attack at once the most dangerous region—the inner margin—where are found the vessels in the carotid sheath. This is accomplished principally with the Allis blunt dissector, which has justly been denominated one of the most useful of all surgical instruments. Two or three sharp curved retractors are used to great advantage to separate the tissues from the tumor, their location being changed frequently as the dissection continues, and the tumor also is pulled and rolled out by them, rather than seized by vulsellas, in the most advantageous way to aid in its extirpation. No tissue is cut or torn by the dissector until it has been carefully examined. One assistant sponges continually and is ready to make digital pressure should large vessels be wounded, while the other clamps the bleeding vessels as soon as they are cut. Hemorrhage is often serious owing to the numerous vessels which are large and thin-walled, especially if the tumor be of rapid growth. If these vessels are small and cannot be isolated from the tumor they are temporarily clamped and incised, but if they are of any material size a double ligature is at once thrown around them and the vessel cut between the two. The jugular itself may be so connected with the malignant growth that it will be impossible to isolate it, and it is accordingly divided between two ligatures, and no serious results follow the division. If it be wounded slightly a lateral ligature of fine silk mends the rent. The writer has seen the internal jugular unavoidably torn or cut on several occasions, and each time air entered the vein—in one of the cases air being sucked in five times—without the slightest untoward symptom. If this accident occurs the rent is instantly closed by the finger till the vein can be tied.

The growth may extend deep down into the tissues of the neck, and may have so insinuated itself among the various structures as to make this part of the operation most difficult and even desperate. The recurrent laryngeal presents a source of danger and, together with the phrenic, pneumogastric, sympathetic, and descendens noni, is to be avoided.

The dome of the pleura may be injured, and air be sucked into the pleural cavity. Should this occur the opening is at once clamped with forceps and closed with a running catgut suture, or is packed with iodoform gauze. A small amount of air in the pleural cavity will not be of any serious consequence and will soon be absorbed.

The posterior surface of the tumor is dissected loose and the mass rolled over by means of the sharp retractor, and the dissection continued until it is finally removed. Attention is now paid to the bleeding vessels. The smaller vessels are controlled by torsion, the larger ones ligated with strong catgut or fine silk, oozing from the tissues being controlled with successive gauze pads wrung out in hot water, and applied to the raw surface. Should bleeding points persist after the application of hot water they are controlled by additional catgut ligatures. Clots are removed by flushing with hot sterilized water or salt solution, and the wound dried with a gauze pad. Bichloride of mercury solution is not applied to the wound as it is irritating to the tissues, and when used upon albuminoids like blood forms chemical combinations which are not antiseptic, and which may account for untoward effects of disinfection in former years.

If drainage is required a fenestrated rubber drain is sewed in the lower angle of the wound, and the incision closed with interrupted silkworm-gut sutures passed with a curved needle, the suture at the upper end of

the wound being tied first; and as each successive one is tied an assistant makes pressure over the incision with a sponge to obliterate the wound cavity. No iodoform or other dusting powder is used. The anesthetic is stopped. An abundant gauze dressing is applied around the neck, over this a thick pad of sterile wood wool, and occasionally a piece of rubber dam on the outer surface of sufficient size to overlap the edges of the dressings. This is held in place with a wet gauze bandage, and a dry cotton bandage is applied over all, passing under the axilla, across the chest, around the head and over the back to hold not only the dressings but also the head in rather firm position. In place of wood wool the much cheaper pads made of the finest "excelsior" (the stringy wood shavings used for packing fragile articles) are sometimes used. The excelsior is made into pads of various sizes by means of gauze and then sterilized.

The patient is lifted back to the rolling table, warm blankets are wrapped around him, and the anesthetist accompanies him to the ward where his bed has been thoroughly warmed with hot-water bottles. He is placed in bed and hot-water bottles are disposed around him, care being taken that he will not be burned, and he is carefully watched until he is fully out of the anesthetic and intelligence is entirely restored.

In all operations the general technique is practically the same, additional features being used as demanded by each separate case. In operations about the nose and mouth, in many of which a preliminary tracheotomy is usually recommended, Professor Keen nearly always avoids this additional operation by placing the patient in the full Trendelenburg position, that is to say at an angle of thirty-five to forty degrees. Blood, like water, cannot run up-hill, and this position avoids the difficulties which often arise from blood half-choking the patient and also the later great danger of aspiration pneumonia. By turning the head to one side most of the blood runs out of the mouth and the rest is easily removed by gauze sponges in forceps. This posture is used in all cases of cleft palate, tumors of the tonsil, nose, or pharynx, removal of the tongue, cancer of the lip, hare-lip, removal of the upper or lower jaw, etc. When a celiotomy is performed for the extirpation of abdominal tumors and operations on the viscera, the moment the abdomen is opened the chemical antiseptic solutions are replaced by sterile salt solution. To retain the intestines and keep them from encroaching upon the site of operation, Ashton's pads play a useful part. The required number of pads are kept in sterile water after they have been boiled, and a nurse has sole charge of these during operation. She prepares her hands and forearms by scrubbing with soap and water, rinsing with water and alcohol, and disinfects by the method employed by Kelly; the hands and forearms are immersed above the elbows in a saturated solution of potassium permanganate at a temperature of 110° F. until the skin is colored dusky-brown. This color is removed by a second immersion in a saturated solution of oxalic acid, at the same temperature, and rinsed in warm, sterile salt solution. She wrings out the pads in one pan of sterile water and transfers them to another until needed. The water in these pans is changed frequently by the nurse who attends to the solutions, the nurse having charge of the pads handling absolutely nothing but them alone. The number of pads used is not trusted to the memory but is written down on a blackboard, so there will be no controversy at the end of the operation whether any pads are missing, the number at hand corresponding to the number on the board.

Sterilized sheets cover the patient with the exception of the area disinfected for the operation, and towels are used sparingly as they have a tendency to become misplaced, especially if the patient struggles, not being fully under the influence of the anesthetic. As soon as the patient leaves the clinic the soiled sponges and dressings are removed, the floor is mopped with bichloride solution, the operating table is cleansed, and the soiled sheets on the tables are replaced by clean ones. Instruments and needles are gathered from the trays and scrubbed with soap under the hot-water tap; they are wrapped in gauze, the blades of the knives being enveloped in cotton, and resterilized by boiling while the next case is being anesthetized, additional instruments being added according to the requirements of the case. Fresh solutions are made up and the surgeon and assistants disinfect their hands and don clean operating gowns. In order to avoid the possibility of carrying infection to other cases, even with this careful technique, infected cases are always reserved for the last. The rule, "clean" cases first, "infected" cases last, is an invariable one.

The patient after operation usually makes an uninterrupted recovery. In very serious

cases, however, certain complications are liable to supervene, the management of which will be incorporated in a future article. I wish to thank Dr. Keen for permission to describe the technique which is so strictly carried out in the Jefferson Clinic.

1703 WALNUT STREET.

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*THE USE OF INTRAVENOUS SALINE INJECTIONS FOR THE PURPOSE OF WASHING THE BLOOD.**

BY H. A. HARE, M.D.,
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I desire to call the attention of this Society to-night to the use of intravenous injections of saline fluid for the relief of threatened or present toxemia arising from renal disease, diabetes, or any acute infection, whether it be the specific micro-organisms which cause the eruptive or other fevers, or septic infection. My own experience is limited to its use in uremia and in toxemia associated with gangrene.

The use of intravenous injections for the relief of the collapse following severe hemorrhage or injuries is too well recognized as a valuable remedial measure to need any attention at this time. Surgeons resort to it or to hypodermoclysis, or the injection of saline fluid beneath the skin, quite frequently, and these means of resuscitation have practically displaced the obsolete practice of blood- or milk-transfusion. I believe that both plans are resorted to less frequently than is well, particularly the intravenous injections. The fear of an air embolus restrains some, I think needlessly, and the opening of a vein is as timorously performed now as it was boldly made sixty years ago.

The use of intravenous injections for the purpose of washing the blood is however an entirely different matter, one of very much more recent employment, and exceedingly popular with physicians on the European Continent, particularly in France. Within the last year almost every French journal has contained accounts of cases of toxemia treated with more or less success in this manner, and the results have certainly been such as to deserve wide trial and careful study. It is now a number of years since Stadelman proposed and used the intravenous injection of carbonate of sodium for the relief of diabetic coma. This proposition, however, rested upon quite a different basis from that I am now discussing, namely, to antagonize chemically the acid which he believed to be in the blood as the cause of the diabetic coma. We now know that little if any permanent benefit results from such treatment, but that temporary improvement sometimes occurs. Thus Von Noorden speaks in glowing terms of one case of this character in which very good results ensued. Whether the good results which have been recorded were due to the chemical effect, or to washing the blood of impurities, is doubtful, but I am inclined to believe that the fluid entering the vein is responsible.

Before stating my own cases I shall take a few moments to cite illustrative cases from French and German sources:

Maygrier, apropos of a case of placenta prævia successfully treated by three intravenous injections (amounting to six liters) in one evening, says the reservoir of the solution is placed half a meter to a meter above the vein, and all air is carefully expelled from the tube and needle before the latter is introduced. Should the reservoir be lowered by mistake, blood may enter the cannula, clot there, and a clot be injected when the reservoir is raised. If any blood enter the cannula the instrument must be withdrawn and emptied, and the operation recommenced. The entrance of a small quantity of air does not matter.

Lejars exhibited a young man whose ruptured intestines he had sutured after peritonitis was fully established, and who recovered after receiving twenty-six liters of saline solution in intravenous injections; and gave details of three other remarkable cases of surgical infection cured in a similar way. He said that, always providing the kidneys are sound, such injections even in desperate cases have unhoped-for success, and should be generally adopted. Grave and threatening infection may be arrested or attenuated by one large injection, but it will generally be necessary to continue the lavage for some days, to use many liters of artificial serum, and to supplement the intravenous injections by hypodermic injections of moderate quantity every two hours.

Chasserany reported that he had found from experiment voluminous injections (intravenous, intraperitoneal, or subcutaneous) prevent the intoxication of rabbits by strychnine, provided they are made before the onset

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*A paper read before the Philadelphia County Medical Society, March 24th, 1897.

of the nervous symptoms, but Delbet was not able to detect the alkaloid in the urine or saliva of dogs poisoned by strychnine, and in one case only of eight was the effect of the poison modified by the injections. A dog of forty-three kilos received three milligrammes of sulphate of strychnine; then, in eighty-five minutes, 910 milligrammes of the saline solution; all symptoms ceased and the animal recovered. In 105 minutes from the beginning of the injection the enormous quantity of 532 grammes of urine had been passed. The animal was killed some days later by the same dose of the poison in twenty-one minutes. Further experiments had proved that the injection of even large quantities of the saline solution did not cause trouble when the arterial pressure was normal, or even when it was artificially raised by atropine; this method may therefore be employed in certain pathological elevations of pressure—for example, eclampsia. Pressure lowered by copious hemorrhage is rapidly restored by the injection of even a less bulk than the blood lost, but not so rapidly by the hypodermic as by the intravenous method.

Tuffier has practiced intravenous injections, both for hemorrhage and for toxemia, in fifty cases, including two cases of tetanus (after preliminary bleeding), and found the first effect was to restore the normal arterial pressure and diminish the frequency of the heart's action; the second, to cause diuresis.

Proben, in a case of eclampsia, injected two quarts of the normal saline solution; the urine had been almost totally suppressed, with 100 per cent. of albumen, but within twenty-four hours the woman passed 109 ounces.

Berlin reported to the Société de Chirurgie the case of a woman who, three days after vaginal hysterectomy, showed such violent symptoms of sepsis that recovery seemed absolutely impossible. The belly was distended and painful, and there was very marked subnormal temperature and frequent vomiting. On the fourth day the patient seemed to be about dying, whereupon Berlin gave an intravenous injection of a little over a pint of artificial blood-serum, and shortly afterward repeated this injection, using not quite two pints. Marked cyanosis and increased gravity of symptoms followed at once, but shortly there was decided improvement and the patient recovered, being completely convalescent the twelfth day of her illness.

Segond stated that he had used injections of artificial serum for four years in all major operations, and had been able to save many cases of severe hemorrhage by this means. He also stated that in cases of severe sepsis these injections were potent.

Monod had also had excellent results from intravenous injections.

Michaud (*Le Progrès Médical*, No. 2, 1896) gives fifteen cases in which this treatment was adopted, all in septic peritonitis following operation. Of these, five recovered. In one case, the patient being in imminent danger, 1000 grammes of artificial serum at 39° C. were injected, causing immediate rise of temperature of four degrees, and a slowing of the pulse. The serum was used during three days, at the end of which time the patient was out of danger, and recovered. A similar result was obtained after ablation of the Fallopian tubes, where several injections were used, together with irrigation of the peritoneum. The artificial serum of Hayem, or simply sterilized saline water, was used. Various accidents were noted—vomiting, pain in the side, plethora, and disturbance of the cerebral circulation. No later complications were observed. The method is excellent, but other means—drainage, irrigation, reopening of the abdominal incision, and the free local application of ice—are to be used concurrently. Monod has had seven similar cases, with three recoveries. The effects were beneficial, even in the cases which ultimately terminated fatally.

In the *Journal des Practiciens* of January 23, 1897, Bovet and Huchard first review the literature as to the employment of subcutaneous injections for toxemia, and then report an interesting case of pyelonephritis occurring in a married woman who had been a sufferer for a long time from a mild albuminuria. The patient became seriously ill from general toxemia, fever developed, the urine became scanty and albuminous, the tongue was dry, and a large number of casts were found in the urine. The pulse rose to 130; respirations to 28. Under these circumstances it was considered wise to inject a considerable quantity of normal salt solution. The authors publish a table and a temperature chart showing the course of the case.

The treatment began on the 20th of April and ended on the 15th of October. During this time the patient received injections subcutaneously twenty-five times and by the rectum about twenty times. The quantities injected under the skin varied from three ounces to two quarts a day, and the urine

made corresponding increases with each large injection. The table which they give not only includes the quantity of the injections, the quantity of urine in twenty-four hours, the amount of salt given each day, but also the amount of albumen, pus, leucocytes and casts, and the general symptoms which the patient presented during the time she was under treatment. They also report a second case in less detail in which there was uremia with general anasarca. As a result of this treatment they believe that hypodermoclysis is an exceedingly valuable procedure.

Usually as the injection is given the patient at once shows signs of improvement, but in from two to thirty minutes he develops a severe rigor with strong, rapid pulse, followed in half an hour by great flushing of the skin and then a profuse sweat, with greatly increased urinary secretion. Sometimes quite a marked febrile movement takes place. Several hours after the patient reports himself as greatly improved.

My own cases were as follows:

A man of sixty-odd years developed acute toxemia with high fever and coma, owing to the sudden spreading up the leg of a gangrene of the toes. At first he could only be roused by speaking sharply to him; later he became still more comatose. His muscles became spastic. Twelve hours after the onset of the toxemia I injected about one quart of warm normal saline into a vein on his arm in the course of an hour. He developed a severe rigor, then broke out in a profuse sweat, and next morning, ten hours after, was perfectly conscious, said he felt first-rate, but later in the day became comatose again and died. He was doomed from the first because of his gangrene.

The second case is that of a man with chronic parenchymatous nephritis, who came into the hospital with twitching of his muscles, and semi-comatose. He had passed scarcely any water for several days. Had had constant headache for six months. Was markedly edematous from head to foot. He was too weak to be bled, or to be purged, or to receive pilocarpine, and seemed too ill for a sweat from a hot pack. I injected one quart of hot saline into a vein of his arm. He also had a mild rigor followed by a sweat, and in three hours thirteen ounces of urine were obtained from his bladder. The next day he said he had no headache, no dizziness, no pain anywhere, and felt no discomfort. His dropsy was not increased. Ten days later, as his uremic condition seemed to be returning, I repeated this injection, with similar results.

The apparatus which I use is constructed as follows, and embodies all that is necessary for the treatment of these cases:

A glass container such as is used for irrigation purposes in antiseptic surgery is set in a frame in order that it may stand on a table rather than be hung against the wall. To the bottom of this container is attached four or five feet of red Para rubber hose, and in the end of this rubber hose is inserted a plain glass cannula; a clip is placed upon the hose in order that the flow may be controlled, and the cannula and tube which have been attached to the blood-vessel are joined to the tube running from the irrigator at the moment when they are both completely filled with liquid, so that no globule of air will be contained in the tube.

We may next consider the best fluid to use. The following letter by Edes in the *Boston Medical and Surgical Journal* of March 4, 1897, embodies my views exactly. I shall use the formula herein described hereafter, although in the cases just detailed I had to use ordinary saline solution instead. Edes tells us that:

"A modification of Ringer's fluid has been in constant use in the Massachusetts General Hospital for about two years. The formula is 0.1 gramme CaCl, 0.75 gramme KCl to 1000 Cc. normal salt solution. This fluid has been used chiefly for intravenous infusion, by means of a cannula, in quantities of 500 to 2000 Cc. Its use in the Massachusetts General Hospital started from a suggestion made to the writer in 1894 by Dr. William H. Howell, formerly Assistant Professor of Physiology in the Harvard Medical School, who was then repeating some experiments of Sydney Ringer. One set of these experiments showed that calcium salts are essential to the clotting of blood. Another set consisted in passing different fluids through an isolated heart (frog's), and observing the character of the beats and the length of time the beating was sustained by such fluid. Blood-serum sustains the beats well and for a long time. A solution of the albumens of the serum without salts does not sustain the beats well, nor does a simple normal salt solution. The addition of a calcium salt alone to the salt solution causes strong beats, which however are too prolonged, and therefore inefficient. The addition of a small amount of potassium chloride corrects the character of the beat,

and this combination, normal salt solution plus calcium plus potassium, will sustain heart beats as well and as long as blood-serum.

"The idea lay very near to supply such a fluid to the circulation in cases of extensive hemorrhage, in place of using simple salt solution, which, experimentally at least, does not sustain the heart so well. Ringer's fluid is 100 Cc. of a .75-per-cent. solution of sodium chloride saturated with calcium phosphate, adding 1 Cc. of a two-per-cent. solution of potassium chloride. This is not convenient for use in surgery, however, because the boiling necessary for sterilization precipitates a phosphate of calcium. This might possibly be evaded by sterilizing the ingredients, but in the Massachusetts General Hospital it was found more convenient to use the soluble chloride of calcium. The fluid can be made up in Florence flasks, which can be boiled and the fluid kept sterilized for accident work, and warmed for use by placing in a pail of hot water.

"The difficulty of comparing the action of Ringer's fluid with that of salt solution is extreme, as the cases where either is used show such tremendous variations in prognosis independent of any treatment.

"It seemed to the author when he first used the fluid intravenously in accident cases in the winter of 1894–95, that the effect was more permanent than that of salt solution. Two or three remarkable recoveries from hemorrhage and from shock have occurred with, and possibly because of, its use. It is possible that a modification like that of Dr. Locke, containing 0.3 gramme calcium chloride to the liter instead of 0.1 gramme, as used in the Massachusetts General Hospital, is more advantageous; and again it is possible that one percentage may prove better adapted for intravenous use and another for rectal. It is much to be desired that Ringer's fluid should receive an extensive trial, and if possible in such a way that its value compared to that of simple salt solution may be estimated."

I wish in conclusion to strongly urge the use of this method of treatment in the toxemias I have named. I am confident it is well worthy of wide application, and while not a serious operation it offers probably the only chance for a series of conditions almost always fatal. The recovery of a clear mind, the setting aside of oncoming coma, is only to be seen to have this method appreciated.

AMYLACEOUS DYSPEPSIA IN NEURASTHENIA.

By Jas. G. Kiernan, M.D.,
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The nutritional element in neurasthenia seems, like that of insanity, to revert to the condition present in childhood. The insane, especially where insanity is an accidental factor in the life of the individual, preceded by states of exhaustion, not necessarily related to heredity, but very frequently the outcome of ordinary somatic disease, have a tendency to scorbutus and allied nutritional disturbances without adequate external exciting factors, as I pointed out nearly two decades ago.* Underlying this condition are, of course, the disturbances of innervation of the salivary glands, of the gastro-intestinal system, of the liver, pancreas and kidneys, which interfere with proper digestion, assimilation and elimination, thus creating a series of interlacing vicious circles, either one of which has been regarded as the exciting factor of the whole constitutional disorder. From these results the displacement of intestines which were so frequently found in the insane by the older alienists, and of late by Glénard in neurasthenics, who charges these gastro-enteroptoses with being the cause of the neurasthenia. On the contrary, however, the stress to which the bowels and stomach had been exposed by the disturbances of innervation consequent on the nervous exhaustion which preceded acquired psychoses produced, as the older alienists recognized, these conditions. The insane are especially liable to gastro-intestinal disturbances resembling, as Griesinger long ago pointed out, those found in infancy. These, as in the child, are readily under the control of diet. By securing control of the diet formerly in the hands of the contractors I have been able to reduce the death-rate to one-fourth of what it usually was, and to one-tenth of that specifically due to diarrheal conditions.

The fact is generally forgotten that neurasthenia is, as a rule, an initial stage of almost all the acquired psychoses and of many neuroses. The so-called *paranoia acuta* of the Germans, the primary confusional insanity of Spitzka† and the French and American alienists, develops on nervous adynamia. It is a

Journal of Nervous and Mental Disease, 1878.
†*New York Medical Gazette*, 1880.

psychosis "which develops rapidly on a basis of cerebral exhaustion. Consciousness is blurred in parallelism with the conceptional disturbance, and the patients on recovering have as a rule but very crude recollections of their condition. Its duration is variable, comprising weeks or months. The prognosis is as a rule as good as that of stuporous insanity, which condition it also resembles as to etiology; emotional shock, cerebral overstrain, exhausting diseases and excesses being the principal factors responsible for primary confusional insanity. The patients suffering from the psychoses, after a rapid rise of their symptoms during a period of incubation rarely exceeding a few days, present hallucinations and delusions of a varied and contradictory character. The delusions may resemble those of mania and more often those of melancholia, but no emotional state is associated with them. The patients assert in the same breath that their property is being stolen and that they are going to take part in some state affair. There is a surface resemblance between the confusion of mania and that of acute confusional insanity. The confusion of mania is not the expression of a genuine confusional state, but of a disparity between the ideational items and the word-channels through which they seek exit. That of acute confusional insanity is an expression of a true essential confusion of ideation."

This adynamia is a peculiar condition of the entire organism, a nervous asthenia, most obviously improved and benefited by stimulants in the food sense. The nervous system is the first part visibly affected, the heart the second; the contractile power fails, not from want of blood as in anemia, but more from shock or some toxic influence. The capillary activity seems impaired, the metabolism and nutrition thereby diminished; the contractile power of the heart and the blood-pressure being much decreased. This condition appears in acute and chronic forms of disease alike, partly as the main lesion, partly as a complication. Adynamia may cause many various disorders where foods have a distinctly beneficial action—headache, neuralgia, dyspnea, syncope, spasms, paralyses, etc. Individual causes may have a depressing influence on the general system, from emotion, as intense grief, joy, terror, shock, lightning, electricity, overwork, excessive intellectual toil, domination of violent passions, protracted anxiety and distress of mind, exhausting and prolonged diseases, foul air, etc.

This adynamia may proceed into neurasthenia, localized in the spinal cord and affecting spinal territories in such a way as to simulate organic disease, or it may take a similar course in regard to cerebral territories, or it may assume the type so generally recognized as neurasthenia with its morbid fears, its alternation between emotional depression or exaltation, its helmet sensation, its insomnia, its vertigo, or its disturbances of orientation. Neurasthenia is preceded by states which interfere with proper secretion in the glands concerned in digestion, and noticeably with those concerned in digestion of starch, whose secretions are altered in quantity, quality, or both. Recognition of the necessity for dietary regulation is general, but the method of regulation is very contradictory. As the evil influence of uric acid leucomaines is generally recognized, the supply of animal nitrogenized food is usually limited, and on the other hand the supply of starch and sugar, as well as the vegetable proteids, is increased. The principle here recognized is from a chemical standpoint seemingly correct, but from a biochemical decidedly erroneous. The interference with the starch-digestion glands already indicated has left a deficiency in the organism which will aggravate the existing condition if the excess of starch be given. Through this error often occur the distressing phenomena resultant on fermentation which so frequently annoy neurasthenics and underlie the creation of morbid fears. If the indication be clear that a proper supply of starchy food be needed to break up that monotony in diet which plays such a large part in metabolic disturbance, then as the absorptive powers are all right the digestive factor should be assisted. These two conditions are recognized, but although the proteid is cut down, it is assumed of necessity that indigestion exists only as to it; and therefore pepsin is given, albeit starchy material is poured in in greater quantities than in health. The fact is that while starch undoubtedly is indicated in neurasthenia, power of its digestion is interfered with, and requires assistance. In these cases a remedy seems needed whose quantity will be minute and which will act rapidly. The agent that I have found excellently adapted in most cases has been Taka-Diastase. This has no contraindication from the bulk of dose, is readily given with meals, and in the quantities needed is exceedingly economical. It tends to diminish retrograde metamorphoses in the intestine and hence destroy the undue accu-

mulation of gas which is so unpleasant and distressing to the patient, in both its subjective and objective aspects. One great recuperative factor in the treatment of neurasthenia is diet, and one great difficulty in the way of proper diet is constituted by the mental and physical effects resultant on monotony. The elements in diet which would prevent this monotony are such as are logically contraindicated because of the interference with their digestion by the digestion innervation disturbances consequent on the disease.

As a rule these disturbances largely involve amylaceous digestion and hence require agents like Taka-Diastase for their assistance. This agent, while of no value in the treatment of nervous exhaustion considered as a neurosis, is of very great service in securing the proper dietary care of these patients, which plays such an enormous part in the recuperation of their nervous systems.

VENESECTION.

KRÖNIG (*Berliner Klinische Wochenschrift*, Oct. 19, 1896) begins a study of this subject. He refers to the authorities who have recently advocated venesection in certain cases, and first discusses its use in acute pneumonia. The effect of edema of the lung, or a very massive exudation compressing the capillaries, is such as to cause an insufficient exchange of gases, thence a CO_2 intoxication. With this is associated a mechanical difficulty. For a time the reserve force of the right ventricle can overcome these difficulties, but when exhaustion sets in there is dilatation, and then commences the danger to the patient. The blood is driven into the left auricle with difficulty, and the heart muscle is insufficiently nourished. The pressure in the pulmonary circulation increases, and that in the aorta diminishes. To overcome these dangers recourse is had to two expedients, namely, (1) to increase the power of the right ventricle by stimulants and cardiac tonics; and (2) if this does not succeed, to reduce the mass of the blood by venesection. Often venesection then produces a diminution of the cyanosis and of the dyspnea, and the pulse gains in strength. The author believes that the best time for venesection is near the time of the crisis. It should be repeated if necessary. He refers to three apparently hopeless cases in which venesection was followed by recovery. Again, in non-febrile affections of the heart and lungs the pulmonary circulation may become overloaded. Here venesection may give even better results than in acute pneumonia. Occasionally in heart disease sudden exhaustion may occur in a heart hitherto acting relatively well. Cyanosis, smallness of the pulse, intermitting respiration, may lead quickly to death. By a venesection the right heart is relieved. The author refers to two such cases. One occurred in a man aged fifty-eight, who was seized with sudden and most severe dyspnea. After bleeding to 200 cubic centimeters the cyanosis rapidly disappeared. In the other case a girl aged sixteen, with heart disease, was suddenly seized with great cyanosis. The radial pulse could not be felt, and there was Cheyne-Stokes breathing; 380 cubic centimeters of blood was withdrawn, camphor injections given, and artificial respiration practiced. On the following morning there was no trace of the severe symptoms of the day before. There is a group of cases in which the cardiac tonics do not act satisfactorily. The author refers to one case in which the patient appeared almost moribund. Digitalis failed to relieve him until venesection had been performed, when it yielded the best results, and the patient lived for two years.—*British Medical Journal*, Nov. 28, 1896.

THE ACTION OF SULPHATE OF QUININE AS AN OXYTOCIC.

SCHWAB in the *Journal de Médecine de Paris* of November 29, 1896, points out the value of quinine as an oxytocic, thereby emphasizing a fact already well known to American practitioners. He believes that it is of great value in ordinary uterine inertia and in all cases where we have reason to believe that the uterine contractions are or will be feeble. He cites a number of cases in which the administration of full doses of quinine under these circumstances produced the most happy results, and he notes a number of French authors whose experience has agreed with his own. In the discussion which followed his paper the question arose as to whether quinine administered to pregnant women was capable of producing abortion. That this danger exists seems, however, to be largely imaginary, and the drug can be given whenever indicated in moderate doses to pregnant women prior to full term with perfect safety. This result is also in accordance with what we believe to be the general conclusion of American practitioners.

The Therapeutic Gazette

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Leading Articles.

QUININE IN MALARIAL HEMATURIA.

There is still great difference of opinion between physicians of wide experience as to the value of quinine during an attack of malarial hematuria, it being held by some that it is almost a specific, while others are equally positive that it is contraindicated by this condition. In this connection it is interesting to notice a report made by Robertis, an Italian investigator, an abstract of whose paper was published in the *Deutsche Medizinische Zeitung* of June 15, 1896.

This clinician relates the case of a patient who, after having suffered from two paroxysms of malarial fever, received twenty-five grains of quinine in the course of a few hours, the quinine being given for the purpose of preventing another attack. A few hours after the last of the quinine had been taken he had a severe chill followed by fever, cyanosis, and headache, and the urine became bloody. This was followed in the course of twenty-four hours by jaundice and swelling of the liver. Two days after these symptoms the patient, being entirely free from fever and thinking himself about well, took twelve grains of quinine in three doses, when he suffered from another chill and its consequent symptoms, the urine also becoming bloody.

This case is of considerable interest because it is practically identical with a number of other cases which have been reported in American and foreign literature, particularly by Greek and French writers.

In a collective investigation upon quinine in malarial hematuria, published in the GAZETTE in 1892, the writer of this editorial quoted from the opinions of a number of practitioners. Karamitsas of Athens, in the *Bulletin Général de Thérapeutique*, reported seven cases of hematuria due to quinine, one of them being in a child and the others in men, and curiously enough six of the individuals were medical men. In all these cases he was able to produce hematuria at will by the administration of quinine, and further he found that they passed through the malarial paroxysm without hematuria if quinine was withheld, but developed hematuria if this drug was given. Tommasselli has also seen similar cases, as has also Carreau. Finally Pampoukis and Chomatianos of Athens have reported cases in which quinine caused hemaglobinuria, the salt most frequently producing this symptom being the sulphate.

The conclusions reached in the collective investigation which we have quoted and which it may be permissible for us to mention, considering the fact that they were published some years ago, were that quinine should not be employed in the milder forms of malarial hematuria nor in those cases in which idiosyncrasies to its action exist. On the other hand, in those cases which are malignant in their manifestations in other lines than the mere hematuria and dependent upon a malarial paroxysm superimposed upon a malarial idiosyncrasy, then quinine is needed. In that form of hematuria following prolonged or subacute malarial poisoning, quinine is not to be given in full doses but only as a tonic. The general trend of the information gained in this collective investigation is rather against than for the administration of quinine to combat this condition, for its use in full doses in the presence of hematuria is equivalent to locking the door after the horse is stolen. Hematuria may be considered the result of a malarial paroxysm, and the use of quinine after this symptom has developed is equivalent to its employment after the harm has been done.

THE DIET OF TYPHOID-FEVER PATIENTS.

The question as to the proper diet for patients suffering from enteric fever is one that has been considered settled by the medical profession in general, and it seems to be the almost universal opinion to-day that coincident with the diagnosis or suspicion of typhoid fever we should exclude all solid articles from the patient's diet list, insist that he shall partake of liquid foods only, and rely chiefly if not entirely upon milk.

Against this pure milk diet there are of course four objections which can always be urged with considerable force: First, a diet limited to any one variety of food is not, as a rule, particularly advantageous but rather disadvantageous to the individual both in health and disease; second, milk disagrees even in health with a considerable proportion of otherwise healthy patients; third, the patient is required to take a large amount of liquid in proportion to the nourishment which he obtains, which perhaps is not so great a disadvantage in that it tends to flush the kidneys; fourth, milk very frequently produces, as is well known, a large amount of gas in the bowel, and should constipation be present as a symptom of typhoid—and it certainly is frequently present notwithstanding classical descriptions to the contrary—this diet will increase both the tympanites and the confinement of the bowels. We confess that it is our custom to resort to a rigid milk diet in all such cases, but our attention has nevertheless been called to and interested in an article by Dr. A. G. Barrs, Professor of Therapeutics in the Yorkshire College of the Victoria University in England, which he has contributed to *The British Medical Journal* of January 16, 1897.

In this article Dr. Barrs inveighs against the insistence upon a rigid milk diet and advocates the administration of solid food both during the acute stage of the disease and during convalescence. He asserts, somewhat dogmatically perhaps, that there is no good evidence that solid food is always contraindicated; but at the same time he points out that, in his opinion, our guide in the administration of food to patients suffering with this disease is, to a certain extent, the desire of the patient, provided his mind is clear and he seems qualified to make a sensible statement of his needs.

In Dr. Barrs' experience a patient unable to digest meat and other materials of a similar character, during the early stages of typhoid, is usually too sick to ask for or even to desire solid food, and he does not believe that a person with a dry and sordes-covered mouth and parched tongue and all the evidences of marked asthenia would have any desire for, but rather an abhorrence of, eatables in general. In other words, Dr. Barrs says that "whenever a typhoid-fever patient can eat meat and enjoy it" he is never in much doubt as to his recovery, and he does not think that solid food, provided it is not so solid as to be indigestible, in any way increases the danger of hemorrhage or perforation in typhoid fever. But he evidently believes that the diet, like the treatment, should vary with the symptoms of the patient and not be resorted to in a purely routine manner. His chief object in urging this method is that during the course of typhoid fever the patient needs all the concentrated nutriment that he can obtain, and that a semi-solid or solid diet aids him in its acquirement. On the other hand, it is well for us to remember that in typhoid fever the digestive juices of the entire alimentary canal are so altered in their constitution that under many conditions it is doubtful whether solid food could be digested. It is a fact well known to physiologists that fever arrests the secretion of normal gastric juice, and as this is the case, surely the digestion of meat, even if it was finely chopped up as suggested by Dr. Barrs, could not be carried out.

THE ABSORPTION OF DRUGS.

One of the most important factors in successful medication is the administration of drugs which are easily dissolved in the stomach or intestine and afterwards easily absorbed. In many pressing cases time will be lost if insoluble substances or drugs that are slowly absorbed by the gastric mucosa are administered in place of those which can rapidly enter the blood-stream, and in many instances physicians are prevented from administering remedies which are otherwise indicated because these remedies lend themselves so slowly to the process of absorption. Probably with greater frequency the physician is brought face to face with the fact that while the drug is soluble and easily absorbed under usual circumstances, in this particular instance the stomach of the patient is in such an abnormal condition that it is incapable of carrying out its physiological

function, and that remedies which are placed in this viscus remain unabsorbed and in consequence do not produce any effect, at least for many hours. Quite frequently we believe that the excessive effects which sometimes follow the repeated administration of remedies depend for their existence upon the fact that the inactivity of the stomach has not been recognized, and that repeated doses have been given until after a number of hours the stomach returns to its wonted activity and the total amount of medicine administered over a considerable period of time enters the blood-stream in one mass. It is quite in the power of the physician, however, in many cases, if he is skilful enough to recognize the fact that the stomach is inactive, to stimulate it to the performance of its proper functions by combining with the drug which he most desires to administer another remedy which by reason of its stimulating influence will cause the stomach to produce its normal secretion and carry on absorption. We refer particularly to the administration with ordinary drugs of such substances as capsicum or its oleo-resin, or mustard and ipecac, all of which act as powerful stimulants to the gastric mucous membrane. Or if it is thought that the stomach is in a condition of nervous excitation and yet incapable of absorption, we would suggest the administration of chloroform water or spirit of camphor. By the combination of these remedies with such a drug as digitalis, for example, we quickly obtain the influence of a cardiac tonic through the aid of the gastric stimulation.

LIMITATIONS OF EXTIRPATION OF THE KIDNEY.

With a more detailed knowledge of kidney affections, with improved technique, and, at least in so far as the reported cases are concerned, with lessened mortality for total excision, the operation of nephrectomy for various pathological conditions of the kidney is becoming very much more popular. This operation is based upon a belief that one kidney can be removed without seriously affecting the health of the other, the remaining one serving to eliminate a sufficient quantity of urine.

In this relation a recent communication from Wagner (*Centralblatt für die Krankheiten der Harn- und Sexual-Organe*, bd. viii, heft 2, 1897) is particularly important. It has been clearly shown that in case of congenital atrophy of a single kidney the remaining organ undergoes a process of overgrowth enabling it to take the place of the absent organ. Although it has often been asserted that this also occurs when the organ is extirpated after partial or complete systemic development, there are now a sufficient number of cases which have been subjected to careful examination to prove that such a rule is subject to many exceptions, and that the remaining kidney is sometimes unable to take upon itself the functions of both.

Such a post-operative insufficiency often develops when least expected—that is, when there is every clinical evidence to show that the remaining organ is healthy. The true basis of this insufficiency seems to depend upon a bilateral crippling. It has been proven that long continued suppuration of one kidney, whether it be due to calculi or to other exciting causes, often leads to an undemonstrable chronic parenchymatous and amyloid degeneration of the other kidney, and hence to a suddenly developed insufficiency when the obviously diseased organ is removed.

Israel has also shown that even though the remaining organ be healthy, following operation, an ascending infection from the bladder is prone to develop.

In other cases although the remaining kidney is healthy there develops in it, following unilateral nephrectomy, a coagulation necrosis which destroys the secreting epithelium and shortly leads to insufficiency and death. The cause of this parenchymatous nephritis is said to depend upon the influence of narcotics and antiseptics, especially chloroform, carbolic acid and iodoform.

Exceptionally following nephrectomy fatal anuria develops, although macroscopic and microscopic examination of the remaining kidney show no pathological alterations. The inhibition of secretion is in this case probably reflex and of a similar nature to the anuria which develops in consequence of unilateral ureteral obstruction by a stone.

It is also obvious that in case of unilateral absence or shrinkage of the kidney removal of a single secreting organ would be followed by anuria. The possibility of such a congenital deformity must always be considered before deciding upon extirpation of the kidney. Morris found from a study of over 20,000 autopsies that this congenital malformation occurred once in 318 sections. Ballowitz has collected 213 cases of single kidney and finds that in man the left kidney is generally absent; in woman the anomaly is equally fre-

quent on both sides. It is about twice as frequent in men as in women.

The possibility of fusion of the kidney must also be considered, since operation under such circumstances is necessarily fatal unless the condition is recognized.

Socin and König have, however, operated on a horseshoe kidney, dividing the band of connection without serious hemorrhage and removing the diseased portion. Braun under similar circumstances was deterred from completing his operation by uncontrollable venous hemorrhage which was followed by death.

Practically the only method of recognizing abnormalities of formation or position of kidneys is by exploratory incision. All other diagnostic means are unsatisfactory. Even cystoscopy and catheterization of the ureters may fail. This is especially the case in horseshoe kidney, since usually there are two ureters opening into the bladder in the normal position. In other cases of fusion double ureters are frequently observed. Indeed the ureters may be multiple.

Congenital absence of one kidney is commonly accompanied by absence of the ureter and of the corresponding portion of the vesical triangle, although this rule may have many exceptions. In women congenital absence of one kidney is often shown by unilateral abnormalities in development of the sexual system.

In addition to the dangers already mentioned which are attendant upon nephrectomy, it cannot be denied that when the organ is deeply placed and adherent to surrounding parts its removal is one of the most difficult and dangerous procedures known to modern surgery.

In the operations undertaken for the removal of malignant growth or tuberculous infiltration, cases should not be counted successful simply because the patient recovers from surgical interference. Even with a perfectly healthy, properly compensating kidney such a patient is more vulnerable than one provided with two kidneys. Autopsies have shown that more than one-half the cases of congenital absence of the kidney showed some disease of this organ, and the majority died because of such disease. Such kidneys are particularly subject to stone. The single kidney remaining after nephrectomy is even more vulnerable.

Schramm has reported a case in which he removed the kidney of a 25-year old woman because of hydronephrosis. Four years later she became pregnant and up to the fifth month suffered from polyuria and albuminuria, and later there developed an irregular heart action. This patient recovered, although she was slow in convalescing. The author concludes that under such circumstances—*i.e.*, when one kidney has been removed—future conception should be prevented.

It is evident from what has preceded that a kidney which is functionally sound should never be sacrificed; the diseased kidney should only be removed when the nature of the disease and its extension are threatening. Kidney diseases which more conservative methods may cure, even though these require a long period of time, should not be subject to nephrectomy, since even a very small portion of secreting substance may be a vital necessity to the system.

In the vast majority of kidney diseases nephrectomy can advantageously be substituted by nephrorrhaphy, nephrotomy, partial resection, resection of the ureters, implantation of the ureters, or other procedure. Nephrorrhaphy is the operation for wandering or displaced kidney. Nephrolithotomy should be employed in all cases of stone when the latter has not led to profuse suppuration and extensive destruction of kidney substance. Nephrotomy is sufficient in the majority of cases of kidney suppuration and of hydro- and pyonephrosis; also for the relief of solitary cysts of the kidney or of echinococci. Partial extirpation is indicated in the rare cases of non-malignant tumor, of suppuration, concrement or cyst formation. In the case of fistula, if the kidney is sound resection should be replaced by a plastic operation upon the ureter.

Nephrectomy may be primary or secondary. Primary nephrectomy is indicated in cases of malignant growth, either from the kidney itself or its capsule. The mortality in eight years has been extraordinarily diminished, probably because of increased skill in diagnosis and improved technique, though it is rare the true nature of the affection is detected early. Exceptionally hematuria and pain will justify an exploratory operation through a unilateral or bilateral lumbar incision. Under such circumstances nephrectomy promises well. Very exceptionally repeated examinations of the urine show fragments of a tumor.

Palpation of the kidney, if carefully conducted, sometimes will enable the surgeon to make an early diagnosis. Israel showed this in four cases, the accuracy of his diagnosis

having been confirmed by operation. At the present time a tumor growing over the upper segment is practically inaccessible, and Rovsing states this is the region of the greater number of these tumors. Seventeen cases were collected by Wagner in 1893 in which the patients lived from one to six years without recurrence. Those who remained free from recurrence for two years may be regarded as cured, since later rescidivity is unusual. There are exceptions to this rule, as in the case contributed by Rovsing in which there was recurrence after three years.

An examination of over a hundred cases of nephrectomy for malignant growth shows that in the great majority of cases there is recurrence or metastasis within six months; that these accidents are progressively less frequent with the lapse of time, and with few exceptions are not observed at all after two years. As to the direct results of operation for malignant growth of the kidney, the mortality has been diminished from 61.22 to 24.40 per cent.

Reports on Therapeutic Progress

THE THERAPY OF DIPHTHERIA OF THE CONJUNCTIVA AND TETANY.

The serum or antitoxin treatment of pharyngeal and laryngeal diphtheria has taken an unassailable place in the therapeutics of this disease, and we now look for reports of its utility in the treatment of diphtheria manifesting itself by the deposition of membranous formations in other parts of the body, such as the conjunctiva. Very recently some statements worthy of note have been made anent such conditions by GREEF. He treated after this method fifty-two cases of genuine conjunctival diphtheria, with the very gratifying result of seeing thirty-seven of these cases recover. In only two did death result. This is a percentage that has scarcely been equaled. Naturally in conjunctival pseudo-diphtheria the serum treatment is of no use, but it is a matter of importance to bear in mind that the author avers that such treatment does no harm, particularly when we recall that Guttmann claimed that a greater proportion of cases of diphtheria were followed by polyneuritis when subjected to antitoxin treatment than when treated in other ways. Greef was unable to draw any conclusions as to the effect of the serum treatment on the course of the paralysis that so often follows diphtheria on account of the relatively small number of his cases. He does say, however, that he has not noticed the more frequent occurrence of neuritis in cases that have been treated with serum. We expect to be able to publish within a few months a report on a large number of cases of diphtheria to show that the antitoxin treatment, instead of conducing to the occurrence of multiple neuritis, not only does the opposite but has a most benign influence upon this condition when symptoms of neuritis appear early in the disease.

In this country at least tetany is not a common condition. We believe, however, that its occurrence is more frequent than the scant literature of the subject would lead one to believe. This is so because, in all probability, a number of cases in which the symptoms are comparatively slight go unrecognized, while others are diagnosed as "fits" or "spasms." The nature of tetany is still a matter of active dispute, the most universally accepted view of its causation being that it is a neural or neuro-muscular manifestation of some hemic poison of endogenous or exogenous origin. Comparatively few writers have subscribed to the views of Kassowitz and others that it is a cerebral manifestation of rachitis, analogous to laryngismus stridulus, for it is believed that such a view is opposed not only by experience but by the tenets of modern pathogenesis. It seems to be very probable that the toxic substance that causes the symptom tetany is absorbed from the stomach, and that it is formed as the result of functional derangement of that organ or of organic disease. It is a well known fact that the most fatal form of the disease is associated with a peculiar destructive process in the walls of the stomach. Added to this there may be some special vulnerability of the nervous system analogous to that existing when chorea develops from some humoral poisoning. Oddo has recently asserted that the contention of many German writers that laryngeal spasm is pathognomonic of tetany is a fallacy. It may occur just the same as spasm of the ocular muscles and stiffness of the muscles of the neck occur, but it is no more pathognomonic of this condition than the latter are of meningitis.

In the treatment of tetany this writer does not suggest anything new, but basing his therapeutic suggestions on the modern conception of the disease he recommends the removal of the toxic factors by means of stomachic and intestinal lavage; and at the same time he administers substances that

contribute to a condition of the intestines that is at least inimical to fermentation and putrefaction, such as small doses of calomel and benzo-naphthol in one-half grain doses five or six times a day. If there be any indication for the use of vermifuges they should be given. The peccant activities of the poison on the neuro-muscular system are counteracted by the administration of bromide of strontium and chloral. In our estimation bromide of strontium has no superiority over any of the other bromide salts, and the chloral is the most efficacious factor in the combination. We are glad to note that this author recommends the use of chloroform to cut short the tetanic condition when it becomes very severe.—*Pediatrics*, Dec. 15, 1896.

CONTRAINDICATIONS OF SALICYLIC TREATMENT IN ACUTE RHEUMATISM.

JACCOUD (*La Semaine Médicale*, Oct. 28, 1896) holds that the beneficial action of salicylate of soda in acute rheumatism is confined to the joint affection, and has no effect on the visceral complications. He never prescribes it where there is endocarditis; in pulmonary complications it increases the dyspnea, promotes the appearance of albuminuria, and when there is headache, delirium, or other cerebral phenomena, might entail the patient's death. In the more common form of rheumatism in which the visceral complications are of moderate intensity and do not show till the second week, it is not unusual to meet with a sort of alternation in the severity of the arthritis and the cardiac or pleuro-pneumonic affection. Salicylate of soda, he believes, in relieving one aggravates the other, and to a proportionate extent. He quotes statistics of Donald Hood, S. Coupland, G. Smith, and Bodt, to show that visceral complications are more common in cases treated by salicylates of soda than in others, and concludes it ought never to be given when such complications exist.—*British Medical Journal*, Nov. 28, 1896.

A FEW PRACTICAL HINTS TO MEDICAL MEN ON THE PRESERVATION OF THEIR OWN HEALTH.

In the *British Medical Journal* of December 19, 1896, was published an address delivered by Mr. JOHN M. TEALE on this subject before the Leeds and West Riding Medico-Chirurgical Society. He began by saying that he proposed to offer a few practical suggestions as to how each of us may do something to take care of his own health, which is of some considerable value not only to our families and our patients, but to ourselves. In reading the addresses delivered to students at the opening of the October Sessions one is often struck by the vast variety of suggestions that are made as conducive to success. But were the author asked what, in his opinion, would most conduce to the success of the general practitioner, he should say power of concentration and command of temper.

By power of concentration he means that power by which a man, however wearied, on entering a house is able instantly to abstract his brain from everything that has gone before, and to concentrate his mental faculties on the case that is before him. Patients are naturally somewhat selfish, and are very quick to observe if they do not get full attention, and if, when the finger is on the pulse, the mind is with the patient who preceded him.

Secondly, command of temper. To the quick, high-strung, sensitive man, exhausted by the worry and anxiety of daily life, thorough command of temper with testy, querulous, exacting patients can only be obtained by rigid self-control commenced in early life. To be forever bearing in mind that the patient is the sufferer, that testiness and ill-temper are due to physical weariness and distress, and not to disloyalty to the doctor, is a task that will try the strongest nature.

If, then, concentration and command of temper are essential to success, how can they best be cultivated and obtained? Surely by living as far as possible a simple, healthy, outdoor life, in constant physical training. Young men nowadays, as a rule, at some period of their student life pass a year or two in a high state of training; but how many of them, amid the worries and distractions of a busy practitioner's life, keep up that condition of training to mid-life, still less to old age? Why should a man become stout and short of wind because he has reached fifty? Simply because he is struggling with his life-work when his physical condition is not fit to grapple with it.

The whole subject of physical training and its usefulness in moderation was brought prominently before the writer in his Oxford days by the late Archibald McLaren, whom he looks upon as the pioneer of modern and rational gymnastics. He well remembers

being selected as one of three lightweights, in conjunction with several heavyweights, to show off the new gymnasium to a squad of army sergeants from Aldershot under Major (now General) Hammersley, and how in a month they were sent back with largely increased biceps and largely reduced abdomens. This was the beginning of regular gymnastic training in the British Army, the results of which were seen at the military tournaments at Islington.

For two years also the author steered his college crew. It was then customary for the coxswain to take charge of the training of the crews, and he was expected to be in such training himself that he could take an oar at any time while the captain coached. The writer learnt then, and has never forgotten, what ease it gives to daily work to be in good condition, and has done his best to remain so ever since.

Assuming that a man is physically sound, and has cultivated athletic exercises in youth, it is quite surprising how easily that condition can be maintained provided only it be done regularly. He remarks that the "strong men" who exhibit in public rarely practice their feats in private, and rely on light dumbbells to keep them in good condition.

For most men light Indian clubs, or the Ranelagh, or exercises on both of them, carried out systematically night and morning, will do all that is needed. It is surprising what a rest, after a hard day's work, some active physical exercise with the arms will be found to be. It is a mistake to suppose that the busy man wants a great deal of physical exercise. His ordinary day's work, with what it involves in taxing mind and body, is generally nearly enough for him, with some physical exercises, as suggested. It is always well to have something in hand, for extra strain comes most unexpectedly. It is well to cultivate the art of sleeping for a few minutes at any time. A man can only live safely on the interest of his vital strength. Any withdrawal of principal should be promptly replaced.

For a sound man everything that is good is wholesome, taken at proper times and in proper quantities. One should teach his stomach to understand that within these limits every good thing well cooked is good for it. After a man is twenty-five or thirty he only wants as much food as will maintain his weight and not add to it. It is possible to be too busy to dine, in which case a cup of soup, or a sandwich and glass of wine, is better than a hearty meal. A good dinner implies leisure for digestion. Half-an-hour's leisure before dinner will often enable a man to eat a hearty meal. For most medical men he believes a late dinner is preferable, for if taken in the middle of his work either the meal or the patients must suffer. The fewer the meals the better for health. Two good meals and a moderate one are enough for most healthy men leading a busy life.

Teale says: "Mix your wines by all means, provided they are good, and you do not take too much of them. Spirits are useful when jaded or exhausted as a change from wine at dinner, but are unnecessary and hurtful when taken between meals or at bedtime, except for special reasons; 365 glasses of whiskey taken in one year at bedtime are an unnecessary and severe tax on the liver when its work is in full swing."

An ordinary healthy man may have a cold bath daily almost up to any age, but as the object is not only to get up a reaction, but to keep it, most hard-working men require that cheapest of all luxuries, a fire, in the dressing-room, and a hot bath towel. If this is followed by a course of Indian clubs in his flannels, a man will be fit to face any weather.

The same underclothing should be worn summer and winter of wool, and only the outer clothing varied. Colds are generally caught either in ill-warmed rooms or through ill-protected feet. With good Jaeger boots and putties, as the serge leg-rollers are called which were introduced by the 10th Hussars from Afghanistan, one will be able, with a good overcoat, to drive with impunity in an open dog-cart in a blizzard, especially if one have laid in a store of caloric before starting, and by breakfasting in the wraps in which one proposes to travel.

Light your fire whenever you can endure it; it is the cheapest and best health-giver in the world, especially in cold, thundery weather in the summer. With a well-arranged room and a well-contrived fireplace, most healthy people can learn to sleep with their window open winter and summer.

Medical men are specially liable to badly aired beds, for they are often sent for hurriedly. Nor will the strongest constitution resist such an infliction. This risk will best be guarded against by carrying in your traveling-bag a light flannel dressing-gown to put on the damp sheets.

No medical man should ever have a bad tooth in his head. He is courting disaster if he does so. It is a simple matter to brush

the teeth after every meal, and by rinsing with cold water you get an early intimation of danger.

No amount of precaution can make turning out of bed at night otherwise than dangerous. But if an arrangement can be made by which the clothes can be kept aired and warm, and a cup of hot milk with a teaspoonful of brandy can be procured, the risks can be reduced to a minimum.

One word about holidays. Every medical man should, if possible, have an outdoor sport of some kind. Golf and cycling are good, but perhaps the best of all is fly-fishing. It takes one usually into beautiful country, the exercise is gentle and varied, the interest absorbing, and to the author's mind is far better for the jaded practitioner than scampering half over Europe in a hurry in a second-class railway carriage in charge of a party of tourists.

VALUE OF ANTITOXIN IN DIPHTHERIA.

We are told in the *Intercolonial Medical Journal* of Australia of October 20, 1896, by TURNER and ASHWORTH that the use of antitoxin serum injections has caused a large and altogether unprecedented fall in the mortality from diphtheria in the Brisbane Hospital for Sick Children.

This fall in mortality is especially noticeable among the cases in which laryngeal symptoms threaten to cause asphyxia. The proportion of cases recovering without operation has largely increased, and the total mortality has been reduced by three-fourths.

To obtain these results, it is necessary to inject very large quantities of the weaker serums hitherto commonly used in Australia.

No toxic symptoms of any gravity have been observed in any instance to follow the injection of even the largest amount given (50 Cc. in a single injection, or a total of over 100 Cc. in several injections).

The prolonged gradual convalescence observed after severe diphtheria has been in most cases replaced by a speedy return to health.

Both the serum supplied by the British Institute of Preventive Medicine, and that by the Hochst Fabrik under the supervision of Professor Behring, have been found effectual in the most severe cases, if injected in sufficient quantity. Behring's serum has the following advantages: (*a*) known antitoxin-strength; (*b*) greater concentration, so that it is sufficient to inject a much smaller bulk of serum; (*c*) freedom from decomposition; (*d*) less frequent occurrence of urticarial rash.

These conclusions they base on careful clinical observation of the majority of the more severe cases of diphtheria occurring in Brisbane, both before and after the commencement of the antitoxin treatment. They have given their results in statistical form, as the only way of presenting them in a condensed and easily comprehensible manner. Though they have attempted to supplement the figures (which are too small for purely statistical treatment) by brief outlines of some of the cases, they are well aware that it is impossible to bring the full force of the clinical evidence before the readers. The effect on the writers' minds is this—that whereas formerly they regarded diphtheria as a most treacherous and fatal disease, over which medical treatment had little or no direct influence, and of which the mortality was inevitably high, they now regard it as a disease for which we have a perfectly reliable specific antidote. They are willing to admit that there may be, and probably are, malignant cases, with secondary infections from the first, which cannot be saved by the serum; but they have never seen any such cases, and they must be exceedingly rare. The fatal cases they have lately seen have all been ill at least four days, usually longer; and there is no reason for thinking that they could not have been saved by earlier treatment. There will always be a certain death-rate from diphtheria, owing to the postponement of treatment until it is too late. They hardly expect that their hospital mortality will be reduced below ten per cent., unless fewer moribund or advanced cases with secondary complications are brought in. But if the profession and public once grasp the truth that with rare exceptions no child ought to die of diphtheria, it is probable that the actual mortality will become very low.

But to attain this result much larger doses of antitoxin should be given than are at present in common use. The doses hitherto employed, as far as we can gather, are only suitable for the milder cases, or those taken within the first two days of the onset. By the use of serum of the high antitoxin value recently attained under the supervision of Professor Behring, there will be no difficulty in giving doses up to 4000 units. When serum of weak and undetermined strength is used, the only possible course in a severe case is to inject large quantities in repeated doses.

This the writers have done in hospital work, but it is not so easy in private practice. Indeed even in hospitals the use of serum of undetermined strength is to be condemned. It is unfortunate that the antitoxin treatment both in Australia and Great Britain has consisted to a large extent of the injection of insufficient doses (10 Cc. to 20 Cc.) of serums whose only comparative merit is their cheapness. In *The Lancet*, July 18, 1896, will be found a detailed report as to the strength of these serums. As serum of the highest concentration and of known strength is now easily obtainable, it is to be hoped that it will soon be recognized that the use of inferior preparations of unknown strength is not compatible with a conscientious regard for the interests of one's patients.

THE THERAPEUTIC USES OF CHLOROFORM.

We have never been quite able to understand why the use of chloroform to abbreviate all sorts of convulsive attacks—eclampsia of the infant, of the adult, genuine epileptic attacks, hysterical and toxic convulsive attacks, and even epileptiform convulsions dependent upon organic diseases of the brain—has not become more universal. It has three virtues that must commend it to every thinking practitioner: it does the work quickly and promptly, it is practically devoid of danger, and its use is not attended with distressing or malign after-effects. Why time should be wasted when one is called to a child or an adult in convulsions of an eclamptic nature, by putting them in a warm bath, or giving a rectal injection of chloral and bromide, or doing a half-score of other things that have nothing to recommend them except a halo of tradition and the consecration of inherited usage, is difficult to comprehend. An eclamptic attack, it matters not whether it be a manifestation of genuine epilepsy or not, is an evidence of the diminution in the potentiality of those structures one function of which is to subserve motivity, and a perversion of the dynamics of these parts. One attack of such eclampsia contributes to another just as the pathway of a man through a forest contributes to the ease with which he orients himself on a second visit to the same wilderness. It behooves us therefore to cut short every attack of this kind without ceremony, and the best way to do this is by the inhalation of chloroform, not necessarily up to the point of complete chloroformation, but enough should be given to control the severity of the spasms. After that is the time to give bromides, chloral, etc. —*Pediatrics*, Dec. 15, 1896.

THE TREATMENT OF SENILE PRURITUS.

L'Abeille Médicale of November 28, 1896, gives the following prescription:

℞ Bromide of sodium, 2 drachms;
Salicylate of sodium, 2 drachms;
Acetate of sodium, 1 drachm;
Infusion of gentian, 2 ounces.

A teaspoonful of this solution is given in water one hour after each meal, and when the pruritus is limited to certain regions the following solution is employed locally:

℞ Liquor potassi (6 per cent.), 2 drachms;
Carbolic acid, 4 drachms;
Linseed oil, 1 ounce;
Essence of bergamot, 10 drops.

Should the pruritus be generalized the following ointment may be employed:

℞ Resorcin, 30 grains;
Ichthyol, 1 drachm;
Lanolin, 2 ounces.

GUAIACOL IN PYREXIA.

Before the Section on Medicine of the Royal Academy of Medicine in Ireland, held during November, 1896, and reported in the *British Medical Journal* of December 12, 1896, Dr. DRURY read a paper in which he drew attention to the uses and modes of the use of guaiacol, but selected the method of epidermic application recommended by Rondet in 1895, as a means of reducing temperature, as superior to either internal administration or by hypodermic injection. By this method one to ten minims were rubbed into the skin, previously washed, and the part covered with oiled silk. About fifty cases had been so treated. The conclusions arrived at were: (1) As a rule, no ill-effects follow its use. In one case of enteric fever in a female, after the use of ten minims on five successive evenings, collapse occurred several hours after the fifth application; the collapse was recovered from. (2) It very rarely fails to cause a fall of temperature, the fall being greater when the temperature is high than when it is only moderate in degree. (3) The fall reaches its maximum generally about one hour after administration, and is maintained for several hours. (4) After its use the skin becomes moist, and the patient generally sleeps. (5) It does not seem to

have any effect on the course of the disease which is the cause of the fever. (6) It seems to act on pyrexia, no matter what the disease may be which causes it. (7) It usually increases secretion of urine, diminishes the night sweats of phthisis, and often relieves the cough. (8) Cardiac failure appears to be the only contraindication to its use.

A series of cases were then given in illustration, most of which were used merely as test cases, the drug not being used as an ordinary line of treatment. Its routine use was not recommended; but for exceptional cases, where temperature is itself a danger, it is considered a safe as well as a simple and pretty certain method of reducing temperature.

Dr. CRAIG referred to charts of three enteric patients in which the drug had been used on occasions when the temperature became high; a marked fall followed in each case, and that without any injurious effects. It seemed to him that the drug acted by producing perspiration, and that it was the evaporation that caused the reduction of temperature.

Dr. JOHN W. MOORE said that if Dr. Craig's explanation of the action of the drug was correct they would not look forward with confidence to its effect as a reducer of hyperpyrexia in acute rheumatism. Dr. Moore would enter an emphatic protest against indiscriminate attempts to reduce temperature, especially in typhoid fever. The effects of guaiacol in pulmonary consumption were altogether different from its operation in other cases. Its effects when given internally in pulmonary consumption were not so immediate and extreme as when it was used epidermically, and rather depended upon its antiseptic properties and its power of reducing the septicemic conditions of that disease.

Dr. O'CARROLL said he had used guaiacol in phthisis and only hypodermically with the result of always reducing temperature, and without collapse. He preferred the hypodermic application, because they could measure the drug more accurately than in the case of the endermic method.

Dr. WALTER SMITH said the statement that a few minims of this drug rubbed into the skin could reduce temperature within an hour implied two things, namely, that the drug was absorbed, and that it produced a remarkable effect on the interior tissues of the body. He would confine his remarks to the pharmacology of guaiacol. The fact that it was capable of free administration in the ways described proved that it was comparatively non-irritant; and yet it was closely related to the phenols and other members of the carbolic acid group. How then did it come about that, whilst they dare not rub the poisonous carbolic acid into the surface, they could do so with guaiacol, which was the chief representative of the creosote group, and find it comparatively harmless?

The PRESIDENT said the outcome of the discussion seemed to be that they had got a drug which was not only very useful but also very dangerous. He had reduced temperature with guaiacol in one or two cases with good effect. It had been said that the drug acted by producing perspiration; but it had also been stated that it was a powerful vasomotor constrictor. If that were so, its action might be mechanical. It was also an anesthetic, and had been used frequently for the relief of pleuritic and neuralgic pains. The hypodermic injection of guaiacol had been followed by most alarming collapse.

THE TREATMENT OF PUTRID BRONCHITIS.

L'Abeille Médicale of November 28, 1896, asserts that ROSENFELD has obtained good results in the treatment of putrid bronchitis by the injection of a five-per-cent. solution of nitrate of silver into the trachea. He asserts that one to two cubic centimeters of this solution may be injected each day without provoking an excessive cough. As a result there is a diminution in the quantity of the sputum, disappearance of its fetid odor, and an amelioration of the bronchial symptoms

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THE TREATMENT OF ACUTE OTITIS MEDIA.

In the *Journal of the American Medical Association* of December 19, 1896, NORVAL PIERCE tells us that in this condition local bleeding has been carefully eschewed. The writer regards cataplasms as not only of doubtful service but actually harmful. They denude the skin of its protective coverings, and thus open up new portals for the entrance of infection. And if a mastoid operation should become necessary the dangers of sepsis are increased by the raw suppurating surface left by the blister in the very field of operating. Further, he is far from being convinced that they have any marked influence on the pain or course of the inflammation.

He regards the employment of cold as of distinct worth in many cases. This is employed by means of a Leiter's coil or a common ice-bag. The ordinary condom is a very good form of bag, being light and flexible, and on account of its peculiar shape especially adapted for coiling around the mastoid region. Heat may be employed, if deemed necessary, by applying hot antiseptic fomentations or the sand-bag.

Anodynes and all other drops have been abandoned. That anodynes are absorbed at all when dropped into the ear is doubtful; that they are infectious is certain. Therefore, as our whole endeavor is toward asepsis they have been abandoned. Narcotics for the relief of pain are best employed internally or hypodermically. Syringing has also been proscribed for reasons already mentioned in speaking of drops. Before perforation occurs irrigation can do no good as a means of cleansing and antisepsis in the middle ear, because the intact tympanic membrane closes off the cavity from the external auditory canal. The external auditory canal may be rendered aseptic much more readily by a moist dressing. It is the writer's experience that irrigation, as a means of applying heat or cold for their antiphlogistic or quieting effects, is not well borne—that is, in a number of cases it has added to the pain and increased the congestion. Besides, an apparatus which will enable us to use continuous irrigation in the external auditory canal is very cumbersome. Wetting the bed and the patient is almost unavoidable, especially when the patient is young. Intermittent hot irrigation has proven harmful in his hands. Occasionally syringing with sterilized saline solution has been allowed to clear the external auditory canal when the secretions take on a cheesy character which accumulates about the walls and membrane. In this connection Pierce exhibited a syringe which he had had made for him by McElroy. It is of glass, which may be rendered aseptic by boiling. In addition it has a removable nozzle. By this device the nozzle, which is the only part in danger of infection, may be changed after each time it is used. Another point in its favor is its extreme cheapness.

Politzerization is never performed in acute otitis media, either before or after perforation. He regards the procedure in these cases as dangerous, as by it fresh organisms are probably driven into the ear or into the mastoid antrum each time it is performed.

The blowing of the contents of the Eustachian tube into the tympanic cavity is not only unreasonable, but in a high degree dangerous. The mucous purulent contents of the tube may drain off into the pharynx; indeed, the ciliary movements of the epithelium lining the tube renders this quite easy. Why, then, force the more or less septic mucus into the middle ear, whence it can escape only with the greatest difficulty? If our modern observations are correct, and we accept the dictum that the violence and chronicity of otitis is largely due to the amount of secondary infection, are we justified in supplying this very infection-bearing material by our Politzerization, in order to accomplish a passing re-establishment of ventilation of the middle ear? Surely not. The writer does not believe we are warranted in doing so, even after perforation has occurred. With a perforation it has been said that by Politzerization we aid in emptying not only the Eustachian tube, but also the middle ear, by driving the contents into the external auditory canal. The same objections are as valid here as they were in regard to Politzerization before perforation. We unnecessarily run the risk of forcing septic matter from the tube into the middle ear. As regards the discharge, that may be much more readily evacuated from the cavum by means of the capillarity of an aseptic, or better an antiseptic, gauze drain.

Politzerization is used, albeit with great care, after the discharge has ceased, the perforation closed and due attention paid to the condition of the nose and naso-pharynx. If an inflammation persists here after closure of a perforation, he substitutes Delstanche's rarefacteur, inasmuch as it accomplishes almost as much as Politzerization in preventing adhesions and anchylosis. If there are indications of a tendency toward adhesions before closure occurs, he employs tubal injections of vasenogen with external massage by means of the rarefacteur, or the latter procedure alone. If fever is present the patient is kept in a recumbent position when possible, although he has had a number of ambulatory patients with temperatures of 99° or 100° F. who made satisfactory recoveries. Obstipation is most usually relieved by the mild chloride of mercury, five to ten grains, combined with an equal quantity of bicarbonate of sodium. When he has seen the case soon enough he has never waited for spontaneous rupture of the drumhead.

Paracentesis has in the writer's hands given the most satisfactory results. Pierce

regards pain with or without fever, and the demonstrable presence of fluid in the middle ear, as positive indications for its performance in acute troubles. As negative indications: (1) the presence of fluid in the middle ear without pain or fever; (2) pain, continuing for twenty-four hours with congestion, but without fever or the demonstrable presence of fluid.

The strictest antisepsis should always be observed. If possible the auditory canal is packed with an ordinary dressing for as long a time as possible before the operation. This moist dressing will be the means of conducting the heat or cold of external applications to the deeper structures. If this is not advisable the canal is carefully swabbed out with sublimate, 1:1000, immediately before the operation. The point which Pierce regards with the greatest favor for incising the membrane is along its inferior circumference, a fraction of a millimeter from its margin.

The position for incision should be the most dependent part of the cavity, and give the greatest chance for the escape of the fluid contents. In skilled hands there is no danger of injuring the fenestra rotunda. With adults anesthesia is unnecessary; when necessary in children, ethyl bromide is used. After the paracentesis the discharge and blood is carefully swabbed away by means of sterilized cotton pledgets. These pledgets are kept constantly on hand and are prepared in the following manner: common toothpicks are used as carriers and the ends of them wrapped with absorbent cotton; test-tubes are filled with these, and the tubes stopped with cotton as is done in preparing them for bacteriological purposes; the whole is then sterilized by means of dry heat. In this way we have always at hand thoroughly sterilized swabs. The external auditory canal is then packed with a strip of sterilized gauze one-fourth to one-half inch broad, care being taken that it barely touches the membrane. As our view of the drumhead is shut off as soon as we introduce the end of the gauze into the auditory canal, he has devised a probe for packing the gauze. It is graduated in millimeters, and by taking the measure of the depth of the canal before introducing the gauze we can see at any time to what depth the gauze has been introduced. This probe is also roughened on the end so that it more readily catches the gauze. He has used iodoform, sublimate, and boracic gauze. Iodoform gauze is irritating to individuals and objectionable on account of its odor, but on the whole it has been found the most satisfactory. The naphtholated chinolin gauze of Haug would seem to be specially suitable for this purpose, as pointed out by Fougeray. The gauze contains five per cent. chinolin and 2.5 per cent. naphthol. This combination forms a salt which is deodorant, is highly antiseptic, and is soluble in pathological fluids.

After the gauze is in place the vestibule of the auditory canal and the conchæ are packed with sterilized cotton; the whole is held in place by collodion applied from the edges of the cotton to the skin. It is very remarkable what an enormous amount of fluid may be extruded in some cases after such a dressing; frequently the dressing becomes saturated twice or thrice daily. In these cases it were better to put on a voluminous external dressing held in place by a bandage.

In fact, by paracentesis and the subsequent antiseptic dressings all the indications for the relief of acute otitis media are met. If there has existed a diminished atmospheric pressure paracentesis equalizes this as speedily as Politzerization. The congestion is reduced by the local hemorrhage necessarily accompanying the operation. Pain is more effectually relieved in this way in the majority of cases than in any other. The cavum is continuously emptied of its contents by the capillary attraction of the gauze drain, while additional germs are prevented from invading the cavity from the external auditory canal.

While the author is unable to give comparative statistics of this and other methods of treatment, he says that by this mode the course of all cases of acute otitis media is shortened, and the number of cases which go on to chronicity is greatly diminished. Surely complications such as those necessitating operations on the mastoid are very much reduced, and patients treated by this method are much less liable to recurrent attacks.

TREATMENT OF SCARLET FEVER BY BATHS.

According to *L'Abeille Médicale* of November 28, 1896, SCHILL, of Wiesbaden, has reported the results which he has obtained from the employment of baths at 95° and of ten minutes' duration, repeated twice a day during the first week of scarlet fever. He believes that the baths aid in relieving the fever and finally in producing free desquamation, and also believes that such a treatment distinctly decreases the danger of complications.

THE TREATMENT OF CROUPOUS PNEUMONIA BY THE HYDROCHLORATE OF PILOCARPINE.

BLIOMONAY has employed the hydrochlorate of pilocarpine in sixteen cases of croupous pneumonia, varying in age from two to twenty-five years. The dose which he administered was 1½ grains in twenty-four hours. After this the dose was progressively diminished. The medicine was invariably given by the stomach rather than hypodermically, and dissolved in water. The patients also received one or two ounces of brandy. No other treatment either internal or external was employed. In nine of these cases the treatment was instituted on the third day of the disease; in the other cases on the fourth day. The conclusions which he arrives at are as follows: Pilocarpine administered on the third or fourth day of the illness exercises no abortive influence over the disease, the attack running on uninfluenced in its duration.

Pilocarpine is not markedly opposed to the spread of a pulmonary inflammation. After pilocarpine is given there is a rapid fall of temperature, which however is not permanent. The pneumonia usually terminates not by crisis but by a lysis or false crisis. Large doses of pilocarpine are of value only in young persons or those who are robust. Should symptoms of salivation come on the treatment must be suspended. In two cases when vomiting came on this symptom was controlled by morphine.—*Rev. de Thérap. Médico-Chirurgical*, Dec. 1, 1896.

SULPHONAL IN THE TREATMENT OF NIGHT SWEATS.

COMBEMALE and DESCHEEMAKER are stated by *Revue de Thérapeutique Médico-Chirurgical* of December 1, 1896, to have obtained excellent results from the use of sulphonal in the night sweats of phthisis. From fifteen to thirty grains of the drug are given each night. The cough is also diminished. In the very advanced stages of tuberculosis, however, the influence of this drug over the sweat is not marked.

THE INDICATIONS, DANGERS, AND TECHNIQUE OF UTERINE CURETTAGE.

In the *University Medical Magazine* for November, 1896, R. C. NORRIS contributes an exceedingly practical and useful article with this title. He points out that when good judgment has been exercised in the selection of an appropriate case for uterine curettage, the next important step is that the physician should be absolutely certain of his knowledge of the dangers of that operation, and of the proper technique to be employed in order to escape those dangers. Many general practitioners will undertake to curette the uterus who would shrink from a vaginal hysterectomy or even a perineorrhaphy and trachelorrhaphy.

It is very unfortunate that the entering so important an organ as the uterus with various instruments is generally considered an operation of minor importance. It is not exaggeration to affirm that the proper selection and skilful execution of curettage of the uterus, especially when resorted to at a period remote from the puerperium, requires a greater degree of sound surgical judgment, a more intimate knowledge of surgical technique, and a larger share of surgical skill, than are necessary for the repair of a lacerated cervix or a torn perineum.

Briefly stated, the dangers to be avoided are: the introduction of infection which may be followed by serious inflammation of the tubes, the ovaries, and the peritoneum, and even by death from septicemia; laceration of the cervix or of the vaginal vaults, due to improperly executed dilatation; rupture of purulent collections in the pelvis, when these, through faulty diagnosis, have been overlooked; perforation of the uterine wall by the curette, the forceps, or other instruments; the induction of abortion through a mistake in diagnosis; the occurrence of serious hemorrhage; and, very rarely, the possibility of ultimate obliteration of the uterine cavity.

A proper selection of cases for uterine curettage and a knowledge of its technique will reduce these dangers to a minimum.

The time selected for operation in nonpuerperal cases should be a few days after the cessation of a menstrual period, in order that sufficient time may be secured during which the endometrium will be regenerated. A preliminary urinalysis should be made. Twenty-four hours before the operation the patient should be put to bed; a saline purge having been administered the day before. The vulva and the vagina must be systematically cleansed the evening before, and the morning of the operation, in the following manner: Thorough scrubbing with green soap and water by means of pledgets of cotton fastened to a sponge-holder should be

followed by free irrigation with a 1-to-1000 bichloride solution, after which the vagina is loosely packed with bichloride or iodoform gauze. Before the patient is anesthetized the rectum should be emptied by one or more enemata, and the urine should be drawn. The instruments he has found most useful for curetting the puerperal and the non-puerperal uterus were then shown. They should always be sterilized in boiling water for fifteen minutes before the patient is anesthetized.

The operator and those assisting him should cleanse their hands with the same care as for a hysterectomy, using an abundance of hot water, with soap and nail-brush, followed by scrubbing with alcohol for five minutes, and a final immersion in a 1-to-1000 bichloride solution.

The patient (anesthetized) is placed in the lithotomy position on a table, when it is always desirable to make a bimanual examination of the pelvic organs to be sure that serious lesions have not been overlooked. Final cleansing as above described is then made, the anterior lip of the cervix is grasped with a double tenaculum and is gently drawn into view when not fixed by inflammatory products, and the cervical canal is thoroughly cleansed. Sometimes it is desirable to retract the perineum. A self-retaining speculum, such as Edebohl's, is very useful for that purpose, especially when one has few or no assistants.

Dilatation of the cervix is not usually required for puerperal cases, but is always employed for the non-puerperal uterus in order to obtain free drainage, which is an essential feature of the operation. For that purpose the anterior lip of the cervix is grasped and steadied with the double tenaculum, and the smaller dilator is introduced. The writer prefers the branched dilators to the graduated bougies; and to avoid lacerating the cervix or even tearing through the posterior wall of the cervix into the peritoneal cavity, care should be taken to learn the direction of the uterine canal, to open the cervix gradually with the smaller instrument, and to be sure the larger instrument passes the internal os before forcible dilatation is begun. After dilating laterally, say for a half-inch, the tension of the instrument is relieved and dilatation to the same extent in antero-posterior and oblique directions is practiced, the position of the blades of the instrument being turned at intervals so as to effect dilatation equally in all directions. In multiparæ sufficient dilatation can usually be made with safety to admit the finger into the uterine cavity; in nulliparæ an inch registered on the scale of the dilator is sufficient. Usually fifteen minutes should be consumed to complete the dilatation, although the time will depend upon the softness or rigidity of the tissues. A finger placed behind the cervix will indicate the degree of tension to which the tissues are being subjected. The uterine cavity should now be thoroughly flushed with a 1-to-2000 bichloride solution passed through a two-way male catheter or a uterine double-nozzle having a return flow. This plan is preferable to the douche-curette, an instrument frequently employed but not readily kept clean. The sharp curette is next passed to the fundus, and with one hand supporting the uterus through the abdominal wall, the entire cavity is systematically scraped until the cutting edge of the curette imparts a scratching or gritty sensation, which announces the fact that the endometrium has been passed and that the muscle wall of the uterus has been reached. Our work must be thorough, and the entire endometrium must be removed if possible. Areas of diseased and infected endometrium untouched by the curette only serve to re-create and perpetuate the disease our treatment aims wholly to destroy. The regeneration of the mucosa begins in the depths of the utricular glands embedded in the uterine muscle, and our effort is to completely destroy the diseased membrane in order that a new one may be formed. Particular attention, therefore, must be paid to the fundus and to the uterine cornua. For these regions Simon's spoon and Sims's angular curette are especially useful. For the lateral walls of the uterus Sims's sharp curette is preferred. While one instrument may be sufficient, the author has been better satisfied to use three, because the angle of the cutting edge in each is best adapted to a different plane of the surfaces to be scraped. The uterus should again be douched, and the débris removed with the curette forceps—an instrument to be employed with caution, since many of the reported cases of uterine perforation have occurred with it.

When the womb has been emptied of all débris and has been douched, the cavity is swabbed with iodized phenol or a fifty-per-cent. solution of carbolic acid in glycerin. A pledget of cotton placed around the cervix and the stream from the douche will protect the vaginal and vulvar mucous membrane during the cauterization of the endometrium.

Finally, a strip of iodoform or acetanilid gauze, one inch wide and one yard long, squeezed out of the bichloride solution, is packed into the uterus, either through a cervical speculum or preferably with a slender uterine dressing forceps. If the uterus is large and subinvoluted and uterine contractions are desired to promote involution, or if the bleeding is very free, the gauze packing is firmly placed; if only drainage is desired, the packing is more loosely applied. The end of the gauze protrudes into the vagina, which is filled with a loose tampon of gauze. An occlusive dressing is placed over the vulva.

If necessary, the urine is drawn in eight or twelve hours. The vaginal packing is removed at the end of forty-eight hours, the vagina douched, and the gauze renewed. The gauze in the uterus is removed on the third or fourth day, daily vaginal douches of bichloride solution, 1-to-4000, being employed until and immediately after the uterine packing is removed. It is desirable to have the patient rest in bed for a week and at the next menstrual period, during which the flow is likely to be scanty. In septic cases after abortion or labor the uterine and vaginal packing should be removed at the end of twenty-four hours, and the vagina and uterus should be freely irrigated, after which the gauze may be renewed.

The douche nozzle used for puerperal cases should have a large calibre, as this freely flushes the cavity. The mechanical advantage of a copious stream to remove débris from the uterus is self-evident. The curette also should be proportionately large.

The writer states that his remarks on this subject contain nothing new. It has been his purpose to make them practical, and to emphasize the fact that through timely interference with the uterine curette, along the lines he has tried to indicate, the lives of a few of our patients will be spared, some of them will escape the removal of their pelvic organs, and many of them will avoid a life of discomfort resulting from the milder grades of pelvic inflammatory disease.

He alludes to the fact that many gynecologists would criticize the wisdom of an attempt to stimulate the employment of the uterine curette by men who from choice or environment are general practitioners. There is no reason why you should not use an instrument potent for good as well as for evil, provided you will use it with intelligence and with a knowledge of its dangers and its limitations.

HINTS ON SEA-VOYAGES FOR PATIENTS.

While the majority of readers of the GAZETTE will not have patients who are benefited by sea-voyages, the following suggestions offered by BARBER in the *British Medical Journal* of December 19, 1896, will be of interest to a few. Barber tells us that while serving at sea he was struck by the number of people sent away for the benefit of their health with absolutely no directions as to the precautions that should be observed in the tropics, and as to matters which greatly conduce to the comfort and well-being of the patient.

In the first place, it is well that an entire stateroom should be secured, especially for phthisical patients, as they are at once a source of infection and also a great annoyance to those occupying the same cabin, and should their complaint become serious it is a necessity.

A crowded ship should be avoided, as unless the patient has an attendant he or she cannot have the attention from the stewards and stewardesses that a severe case demands. These last make most excellent nurses, but naturally they are extremely busy in a crowded ship. The stateroom selected should be amidships, where the motion and vibration are least felt, and for a voyage via the Suez Canal should be on the starboard side homeward bound and the port side outward bound.

The patient should be told not to neglect to wear a cummerbund over his pajamas (not night-dress), as the neglect of this precaution frequently leads to severe abdominal pain and diarrhea, and often colitis, owing to the free perspiration which occurs in the tropics being suddenly checked by a stream of cold air from an open port, hatchway, or punkah. This, of course, greatly militates against the good done by a trip.

The patient should never sleep on deck, especially if suffering from a throat disorder, and he should be told to wear a solar topee as soon as he arrives in the tropics, which protects the neck, as those in indifferent health are particularly liable to sunstroke, sun-headache, and thermic fever. I have recently had a patient under my care who was sent away for the benefit of her lungs, which it was feared might become tuberculous. In Cairo she suffered from sunstroke, and two months later came under my care at Colombo suffering from thermic fever and hill-diarrhea contracted up country, all of which might have been avoided with ordinary care. The patient should be told to keep on deck as

much as possible, and not to stay below as they so often do; but they should not sit under a single awning which allows the sun's rays to penetrate. Clothing should be suited to the varying climates—warm clothes for the Atlantic and Mediterranean (according to the time of year) and flannel for the tropics.

The writer thinks all alcoholic cases should be put under the charge of the ship's surgeon at the commencement of the voyage, as he is able to see that they get no liquor. The morning bath should be taken warm by malarial cases, and those who are in delicate health, especially those suffering from enlarged spleen. Very strict orders should be given about diet, as passengers generally eat too much and take too little exercise in spite of the best advice. In the P. and O. service any diet can be procured on the recommendation of the ship's surgeon.

A good deal has been written about seasickness lately. The writer has found the following prescription of great value:

℞ Chloroform, 1 minim;
Tincture nux vomica, 1 minim;
Tincture lavender, 10 minims;
Water, ad 1 drachm.
Mix.

This should be well shaken, and one teaspoonful taken every hour until the nausea is relieved, and five minims acetate of morphine, liquid, if there is much pain. A tight binder will often relieve the pain due to straining, especially in uterine cases. Alcohol is unnecessary in most cases, and the writer thinks many people take too much if left to themselves. Milk and soda, beef-tea and beef-jelly should be given in small quantities at frequent intervals, and crushed ice given to suck.

He thinks many patients would derive considerably more benefit from the voyage if medical men made it a rule to give them a few hints before sending them on board ship; and also not to neglect to give them a letter describing their cases, which they may hand to the ship's surgeon should they find it necessary to consult him.

A POWDER FOR ULCER OF THE LEG.

Finely powdered chloride of sodium, 10 drachms;
Powdered menthol, 1 drachm.

Mix thoroughly and use as a dusting powder after thoroughly washing the surface of the ulcer clean.

This is particularly useful in atonic slow ulcers of the leg, and aids very materially in maintaining antisepsis and producing healing.—*Journal de Médecine de Paris*, 1896.

SULPHATE OF SODA AS A HEMOSTATIC.

The *Journal de Médecine de Paris* of November 29, 1896, records the fact that sulphate of sodium is useful when administered internally in oozing hemorrhage as was originally pointed out by Kussmaal. Recently Reverdin has employed with success small doses of sulphate of sodium, amounting to 1½ grains every hour, in the treatment of grave capillary hemorrhages, whether they be spontaneous or traumatic in origin. Thus in one case in particular in which consecutive hemorrhage followed extirpation of a small benign subcutaneous tumor, and where the bleeding lasted for a very long period of time, arrest of the hemorrhage followed upon the administration of this drug. He has also found it of value in menorrhagia.

Reverdin noted, however, the curious fact that while the sulphate of sodium when injected into the blood or given by the stomach produces these effects, its use hypodermically was without result.

CHRONIC SULPHONAL POISONING.

SCHULZ (*Neurologisches Centralblatt*, October, 1896) records a case of chronic sulphonal poisoning with fatal ending. The patient, a woman aged fifty-nine, had been under treatment some years for headaches, constipation, and restlessness, and was extremely hysterical. On account of sleeplessness she had recently been taking sulphonal in doses of fifteen grains, and had taken altogether about half an ounce within a month. When admitted to hospital for obstinate constipation with vomiting, there was a smell of acetone in the breath, the tongue was dry and furred, and there was great thirst, with restlessness and insomnia. All the organs otherwise were normal; the urine was normal. The next evening twenty-five grains of sulphonal was given, and the following day the urine was scanty, brownish-red in color, but free from albumen. Four days later the gait was unsteady, and five days after this there was weakness of the limbs and anesthesia of the legs down to the ankles; knee-jerks, previously normal, were now difficult to obtain. Weakness increased, the knee-jerks disappeared, incontinence of urine and feces occurred, and two days later the patient died suddenly. Since the single dose of sulphonal mentioned the urine had continued brownish-red with no albumen, but a few altered red-blood corpuscles. The color was found to be due to hematoporphyrin. Schulz considers that the

toxic results after the one dose of sulphonal were due to the obstinate constipation present causing the sulphonal to be retained in the body longer than usual. Great caution should therefore be exercised in ordering sulphonal for patients who are constipated, and where it is ordered a careful watch should be kept on the urine for hematoporphyrin.—*British Medical Journal*, Nov. 28, 1896.

CHEMICAL TREATMENT OF MORPHINISM.

ERLENMEYER (*Le Progrès Médical*, Aug. 1, 1896) has for three years abandoned the method of rapidly cutting off morphine, which is associated with his name, in favor of one which he finds superior in respect of results. He noticed that the sudden deprivation of a morphinomaniac's drug was associated with the symptoms, both direct and remote, of hyperacid dyspepsia; actual investigation showed that when the sufferings caused by its discontinuance were most severe the sound revealed the presence of excess of hydrochloric acid in the stomach. The reason of this can be deduced from Alt's researches, which show that morphine injected under the skin is largely excreted into the stomach, where it must exert a narcotic influence both upon the gastric glands, inhibiting their secretion, and upon the nerves, benumbing their sensibility. When the source of these actions is removed exactly the reverse changes take place: an excess of acid is poured forth upon the hypersensitive nerve-endings, producing the symptoms of gastric disorder and of reflex nervous disturbances. To counteract this effect Hitzig washed out the stomach and introduced an alkaline solution of Carlsbad salts in place of the strongly acid gastric juice, with marked relief. Erlenmeyer aims, on the other hand, at the neutralization of the hydrochloric acid *in situ* by means of Fachingen water, which contains 0.35 per cent. of bicarbonate of soda. He has treated over thirty cases in this manner, with an entire absence of either gastric or nervous symptoms. It is noteworthy that, although the patients are perfectly well and comfortable without it, the craving for morphine remains unappeased, and they still shriek like maniacs for the drug. To make his treatment absolutely systematic the author intends to administer hydrochloric acid during the morphine-taking period, so as to avoid the subacidity of the stomach, and to retain the natural relations of the nerves to the acid.—*British Medical Journal*, Nov. 28, 1896.

ATROPINE AS A MEANS OF MITIGATING CERTAIN INCONVENIENCES OF QUININE.

In the *Lyon Médical* of January 3 there is an article on this subject by P. AUBERT, who calls attention to a new employment of atropine in the correction of several inconveniences caused by quinine.

Among the symptoms which are produced by the administration of quinine, even in doses of from six to eight grains, the most frequent are buzzing and ringing in the ears, a sound like that of rushing water, deafness, vertigo, and headache. In certain cases these symptoms are accentuated, and the patients refuse to continue the use of the drug.

M. Aubert relates the histories of three cases of neuralgia in which he was able to attenuate to a very great degree, and even to suppress, these disagreeable symptoms by the addition of small doses of atropine sulphate. From five to seven grains of quinine were given at a time, and to each dose the author added 0.007 of a grain of atropine sulphate. In one case this prevented the disagreeable symptoms, and in the two others greatly moderated them The periodical pains were allayed, and no appreciable symptom of atropinism was experienced.

M. Aubert states that he has not had occasion to use larger doses of quinine, and does not know what the results would be with larger quantities. These facts, however, seem to be worthy of being called to the attention of physicians, as he is not aware that atropine has before been employed for the purpose of mitigating the disagreeable symptoms provoked by quinine.—*New York Medical Journal*, Jan. 23, 1897.

SHOULD THE INTERNAL USE OF ATROPINE BE DISCONTINUED?

LEPINE (*La Semaine Médicale*, Nov. 25, 1896) calls attention to the fact that more deaths have followed medicinal doses of atropine than of any other drug. If possible, therefore, other drugs should be substituted for it. Atropine has been used in the following diseases: (1) Neuralgia and other painful affections. Considering the large number of analgesics available it should be used in the present day in exceptional cases only—for example, in angina pectoris. (2) Whooping-cough and asthma. If the cases are severe and have resisted all other treatment, atropine may be tried. The same applies to (3)

epilepsy. (4) It is very doubtful whether it is of any use in hysteria, paralysis agitans, and other tremors. (5) Chronic constipation. As there are plenty of substitutes its use should be discontinued. (6) Lead colic. In this the subcutaneous use of atropine has more disadvantages than advantages. (7) Nocturnal enuresis. Great caution is necessary, since large doses are required as a rule. (8) As a cardiac tonic, and in those cases of permanent bradycardia which often end in epilepsy. Atropine has been tried without much success in the latter cases, possibly because a slow pulse does not always correspond to a slowly acting heart. According to Dehio it may benefit slight cases of cardiac irregularity, but is without effect in severe. (9) In night sweats it acts well, but although small doses tend to prevent collapse, which is common in phthisical patients, larger ones increase the liability to it. To begin with a dose of $\frac{1}{200}$ grain is unjustifiable in advanced cases of phthisis. (10) In chronic hypersecretion of HCl by the gastric mucosa several observers have found that atropine diminished the secretion, but others deny this. However, considering the bad effects of this hypersecretion on the gastric mucosa, in the present state of our knowledge atropine must still be tried. (11) Some observers state that atropine given hypodermically arrests hemorrhage (hemoptysis, etc.) by its action on the arterioles. (12) The injection of atropine before the administration of chloroform to prevent syncope has been given up by surgeons. (13) It has been recommended as an antidote to barium salts, hydrocyanic acid, nicotine, pilocarpine, veratrine and muscarin poisoning. (14) The question of its use as an antidote to opium is left by the author for a further communication.—*British Medical Journal*, Jan. 9, 1897.

TREATMENT OF A CASE OF ADULT HYDROCEPHALUS BY SUPRATENTORIAL AND SUBTENTORIAL OPERATIONS.

William Gordon in *The Lancet* for January 9, 1897, discussed the above subject. He says when we recommend trephining for the relief of intracranial pressure it cannot be a matter of indifference whether the opening be above or below the tentorium, even when we do not aim at the removal of the cause. When the cause is situated below the tentorium this is especially obvious because the subtentorial space is so small compared to the general cranial cavity, its walls and roof are so unyielding, its outlet above and below so narrow, and a portion of its contents so vitally important and so sensitive to compression.

Adult internal hydrocephalus, apart from acute meningitis, is almost always due to subtentorial tumor, and is indeed a very common consequence of such a tumor. The tumor causes the hydrocephalus either (*a*) by compressing the veins of Galen; (*b*) compressing the outlet from the lateral ventricles; or (*c*) compressing both. There is a certain number of cases where, at the necropsy, the mechanism has seemed uncertain, but one of the above appears in most instances to be the correct explanation. From this it follows that in order permanently to remove the hydrocephalus in a case of tumor (at all events, in most instances) the tumor must (1) be removed; (2) subside—"be absorbed;" or (3) become arrested at the same time that relief is afforded by some means to the compression already set up before arrest occurred.

As to removal, in the first case the opening would naturally be made below the tentorium. But such cases are few, because at present there are few subtentorial tumors which admit of removal. Some are undiscoverable from lack of exact localizing data, and cerebellar tumors are very apt to belong to this class; some are inaccessible on account of their remoteness from the trephine hole; some are untouchable because either of their position amongst vital structures, their extent, their nature, their attachments, or their complications. The statistics show this. Dr. Hale White's series of 100 brain tumors includes 41 in which there was a subtentorial growth, 6 in the pons, 1 in the pons and medulla, 1 in the medulla, and 4 growing from the dura mater. Of these 41, White considered that 6 cerebellar tumors and 1 growing from the dura mater could probably have been removed—that is, about 17.5 per cent., a percentage which seems to contrast very favorably with his estimate for the whole brain, viz., 10, or at most 14, per cent. There is, however, a further consideration on which Dr. White lays emphasis: How many of these were discoverable? Cerebellar growths, which form the majority of those removable, are apt to be latent or to give little more than so-called "general symptoms"—*e.g.*, headache, vomiting, and optic neuritis. But the optic neuritis in cerebellar cases is remarkably constant, more so, perhaps, than in tumors of any other part of the brain, usually

early and often obtrusive, because loss of sight is often an early event. If, therefore, optic neuritis were absent he cannot but think that we should hesitate to trephine for the removal of a supposed cerebellar growth unless we had other very pronounced evidences of its existence.

We may secure the subsidence of the tumor. Whether this ever applies to any tumor except a gumma is doubtful, but in any case subsidence requires time, and when symptoms are severe time cannot be afforded. Sudden death may intervene and is far from uncommon. It is, indeed, rather startling to note that out of seven cases which Dr. Hale White considered removable three died suddenly. Sight may be lost while we are waiting, and the combination of optic neuritis due to tumor and compression of the chiasma due to hydrocephalus is apt sometimes to act rapidly. Lastly, it is conceivable that the cortex may suffer from long-continued pressure. What can we do in the meantime? Two operations are open to us: we may trephine above the tentorium and tap or even drain the lateral ventricles (bearing in mind the two main risks of sepsis and over-quick escape of fluid), or we may trephine below the tentorium and allow the subarachnoid space to empty itself. All we want is temporary relief, and either may afford it.

As to arrest, but few cerebellar tumors are syphilitic, and cerebellar tumors form the majority of subtentorial tumors, therefore presumably this majority will not subside under iodide and mercury or otherwise. We can then only hope for arrest, and fortunately arrest is not very rare, especially in the case of tuberculous masses. But we must manage more than a mere arrest of the growth, for there is pressure already set up and we have to relieve it, and relieve it permanently. For this purpose a supratentorial opening will not do, since tapping the lateral ventricles is plainly out of place; and permanent drainage is too dangerous to be thought of. But another possibility presents itself. May not an opening made below the tentorium effect what we require? It will certainly relieve the general subtentorial pressure, and even when skin and muscle are closed over it, it will continue to give additional space. By thus relieving the general pressure may we not fairly expect it also to relieve the local pressure on the veins of Galen or the outlet from the lateral ventricles? If so, the cause of the hydrocephalus should disappear and the hydrocephalus with it. In the following case the conclusion that something of this sort has occurred can scarcely be escaped:

The patient, a rather strumous-looking girl aged seventeen years, was admitted to the Devon and Exeter Hospital on December 28, 1894, with complete blindness, well marked double optic neuritis, headache, and a history of vomiting. She was not anemic, had no symptoms of plumbism, and her urine was normal. She gave the following history, which her mother confirmed: Up to the preceding March she had been perfectly well, but about that time she noticed that when out walking in the dusk a dark shadow would suddenly come over her sight, and "for one or two minutes" she could not see. At first this was very occasional, but gradually it became more frequent, occurring several times in the same evening, and the loss of sight became longer, "three or four minutes at a time." Later this began to occur in the daytime as well, and soon looking at any bright light would take away her sight for several minutes. In the intervals vision was becoming progressively worse. She had always been subject to "bilious attacks" of headache and vomiting, but since March these had become more frequent—about once in two weeks, usually in the morning, and accompanied by vertigo. On November 5, 1894, she went to the West of England Eye Infirmary, being then almost blind. Pronounced double optic neuritis was found and the following note was made: "Vision of the right eye, shadows; of the left, 1–60. She has had for the past week shaking attacks down the right side, occasionally only the arm being affected. These attacks came on on alternate days, and she was sick the whole day. The attacks did not begin in any particular spot, and she did not lose consciousness. There is constant headache, most acute over the left ear; no tenderness of head discoverable, no paralysis of motion or sensation."

She was put on a mixture of bromide and iodide of potash, and for a time the headache and sickness disappeared, nor were there any more "shaking" attacks. On Christmas night she was awakened by intense headache all over her head, with violent vomiting and "shaking" all over, and great tenderness of the skull. She was admitted to the Devon and Exeter Hospital on the 28th. As regards past illnesses, she had had none lately; she had scarlet fever as a child, but it left no sequelæ. She had never had a blow on the head or any discharge

from, or pain in, either ear, and had never been deaf. Her father and mother were both alive and well, aged forty-six and forty-four years respectively. A brother and sister died in infancy from convulsions. Her mother's sister died from what appears to have been phthisis. There was no evidence of syphilis. The patient was a fairly nourished but somewhat drowsy looking girl. She was absolutely blind; speech clear but deliberate; her answers were intelligent but delayed, and then commencing rather suddenly in an unnecessarily loud tone. Memory was good. She walked easily and well when guided. There was a slight headache on the left side of the head between the ear and the occiput; there was no sickness and no giddiness, and the patient slept and ate well. She was given thirty grains of iodide three times a day with small doses of mercury. There was a very slight tremor of the right arm, which movement did not increase. No paralysis of motion or sensation was present. The right knee-jerk was greatly diminished, the left being normal. The condition of the cranial nerve was as follows: There was complete bilateral anosmia. Absolute blindness existed for the last week; the pupils were equal, but sluggish in reacting to light. No strabismus or nystagmus was present, but both lateral conjugate movements of the eyes seemed feeble. The heart, lungs and abdomen were natural, and the temperature was normal. The optic neuritis was very intense, and the swollen papillæ were rather pale. The diagnosis was intracranial tumor. The early blindness, occipital headache, early and sometimes severe vomiting and vertigo, with absence of motor or sensory paralysis, favored the suggestion that it was cerebellar. The "shaking attacks" in the arm and the persistent slight tremor in it, taken with the sluggish ocular movements, might have raised a suspicion of its being pontine, but pressure on the pons from above might, it was thought, explain these. The drowsiness, slow speech, and delayed answers, with the early blindness, were regarded as suggesting distention of the lateral ventricles. Putting everything together it was considered that the tumor was certainly subtentorial, and probably in the fore and under part of the cerebellum. As iodide and mercury were evidently useless, and it was possible that operation might in some measure restore the sight and relieve the headache, it was decided to trephine. It did not then occur to the author that trephining could prove to be more than a palliative measure, and therefore the position of the opening seemed immaterial.

Accordingly, on January 1, 1895, the patient was trephined. The centre of an inch trephine was placed on a line drawn vertically from the external auditory meatus and three inches from the antero-posterior midline of the skull. The dura mater bulged and little, if any, pulsation could be perceived, and on incising it the brain bulged out so forcibly that to prevent an immediate and considerable hernia it was necessary to push a small trocar and cannula into the ventricle. About six drachms of clear, slightly albuminous fluid was drawn off. The brain bulged less and pulsation could be seen in it. The flaps were replaced and sutured. The patient rallied well and the wound did admirably. On the 3d some slight amnesia was noticed, and this was more marked next day, when some slight weakness was observed in the right side of the mouth and the right side of the tongue. These symptoms were considered to be due to the position of the opening, and soon disappeared, so that on the 7th they were noted to be gone. The temperature had remained normal since the operation, and the headache had completely left her; there was also no further vomiting or vertigo. The sight, however, had not returned and did not do so subsequently. Other symptoms now began to make their appearance: the speech became blurred and sibilant as if she were speaking with her mouth full of saliva; slight divergent squint was observed, apparently from weakness of the internal recti, and there was some nystagmus on looking towards the right. On the 8th there was slight proptosis, more marked on the right side, and slight nystagmus on looking either right or left; she was drowsy, with a furred tongue and offensive breath. There was defective sensation to touch over the lower part of the face on the right side, complete loss of sense of touch all over the right arm (the sense of pain was retained), and allochiria over the left arm; on the legs and trunk there was patchy anesthesia; the right leg felt "sleepy and tingling." On the 9th some weakness was noticed in the right hand, and the next day it became absolutely palsied; both knee-jerks were completely lost; there was no weakness of either leg. On the 11th the hand began to recover power, but there was slight ptosis noted on the left side. On the 14th, although there was no weakness of legs, she could not stand on attempting to do so (for the first time since the operation),

as there was marked incoordination, the legs being thrown wildly about. On the 17th the left pupil was noticed to be larger than the right, the right reacted slightly to light, but the left not at all. The relative size of the pupils after this date was somewhat variable, but when unequal the left was always the larger. On the 20th the hernia cerebri, which had been steadily increasing, had become so large that it was feared the skin over it might give way, and therefore an exploring needle was pushed through it into the ventricle and eleven drachms of fluid drawn off. On the 26th the patient was very drowsy and said her right leg felt sleeping and tingling again. Next day she complained of severe pain in the right side of the abdomen, which was extremely hyperesthetic. Her temperature rose to 103.2° F. with a slight rigor, and the right arm and leg became flaccid and powerless. With this the right knee-jerk, which like the left had been completely abolished, returned and became excessive, with ankle clonus, the left knee-jerk remaining absent. On the 30th she was very irritable and lay curled up on her right side. There was some occasional retraction of both sides of the mouth. On February 3 she was almost unconscious, scarcely recognized her mother's voice, and passed her motions under her. The temperature had again become normal. From this date she improved, the hyperesthesia and irritability passing off, and some return of power showing itself in the arm and leg; but the hernia was again increasing, and drowsiness became very marked. At last, on February 12, this almost amounted to unconsciousness; she evinced no interest in her surroundings and seemed steadily passing into coma. So serious did her condition appear that it was thought admissible to run the risk of draining the ventricle, and a small hydrocele trocar and cannula were again passed in through the hernia. Before withdrawing the cannula a very small (No. 1) catheter was pushed in and afterwards tied in place, large dressings being applied over it. A great quantity of fluid drained away, the catheter being kept in for three days. The effect of this drainage was unmistakable: improvement at once set in, and on February 18 a note was made that "she is much better, lies straight in bed, and is bright and cheerful." Her movements became brisk again and the drowsiness vanished. After the catheter was removed the drainage did not cease, but merely lessened, the fluid continuing to escape apparently along the track the catheter had left. On February 25 the "hernia less tense, greatly better." The drainage now ceased, and with its cessation drowsiness began to return, so that on February 28 "she is very drowsy again; no drainage." On March 1 free drainage through the hernia recommenced spontaneously and went on intermittently for a fortnight, one or two days at a time with intervals of two or three days. With this the drowsiness again disappeared and remained absent, and she began to regain the flesh which she had lost. On March 11 it was noted that there was some weakness of the conjugate lateral movement of both eyes toward the right. Then came a week during which there was no drainage, and drowsiness again became very marked. It now occurred to the writer that a subtentorial opening might have the effect referred to above, and accordingly on March 21 a second operation was performed.

After raising the soft parts a three-quarter inch trephine-hole was made over the left cerebellar hemisphere, which bulged considerably. It was thought possible that the tumor might be cystic, and so a small trocar was passed in two directions forwards, inwards and upwards, but no fluid was found. The flap was replaced and sutured; the patient rallied well, and the wound did excellently. There has never been the slightest return of drowsiness since this second operation. An attack of vomiting and headache occurred about four months ago, which rapidly subsided under iodide and mercury.

On December 14 the reporter saw the girl at her home. She was perfectly intelligent, cheerful, and happy; she showed no trace of drowsiness, her answers were not delayed, and she only occasionally hesitated for a word. There had been no return of drainage through the hernia, and the hernia was greatly reduced in size and quite flaccid. This reduction was no doubt largely owing to a gentle continuous pressure applied by the operator. There was a considerable but soft bulging over the subtentorial trephine-hole. Smell was absent, but taste was present (said to be variable); sight remained absent and the discs were white and filled in, but without much change in the calibre of the vessels. The conjugate movement of both eyes was to the left (it used to be to the right), was weak, and there was some nystagmus in all directions. The pupils were large and equal, reacting slightly to light. There was no proptosis. Sensation to touch was normal on the face. There was very slight weakness

of the right side of the mouth, and the tongue deviated slightly to the right. Her right hand was powerless, but she could move the arm fairly. Both legs were very weak and she could not stand, but there did not seem to be much difference between them except that flexion of the ankle was weaker on the right than on the left; sensation was lost on the right leg from the foot to slightly above the knee, and on the right hand and half-way up the forearm. The plantar reflexes were normal, the left knee-jerk was lost, and the right exaggerated, and there was ankle clonus on the right side. The sphincters were normal. She had no pain of any kind and no sickness, had an abnormally good appetite, and had decidedly gained flesh. The growth seemed to have been arrested. Whether the arrest is permanent remains to be seen. If it was tuberculous, as the writer is inclined to think, tubercle might show itself sooner or later in the lungs. She had an occasional slight dry cough, but no physical signs in the chest.

The case was clearly one of intracranial tumor; it was also clearly one of subtentorial tumor; internal hydrocephalus was marked and increasing; a supratentorial trephining was a means of gaining time; and a subtentorial trephining appeared to remove the hydrocephalus permanently.

INTUSSUSCEPTION IN CHILDREN.

Mr. PICKERING PICK in the *Quarterly Medical Journal* for January, 1897, presents a valuable paper on Intussusception in Children. First of all, he advises distending the bowel by inflation of air, which he believes is a better and safer method of reducing the invagination by mechanical means than the distention of the bowel by water.

The manner of performing the inflation is as follows: The child should be clothed in a jacket of wool, and the legs and arms covered with wool and bandaged, as it is very important to keep it warm during the necessary manipulations. It is then anesthetized, and an ordinary enema pipe introduced into the rectum. This pipe is connected by means of a piece of india-rubber tubing to a pair of common bellows, or, if it is at hand, a Lund's inflator. The outside of the tube around the anus is carefully packed with wool, which is held in position by an assistant, so as to prevent the escape of air by the side of the tube. The child is now inverted and held by a nurse, whilst the bellows are slowly and steadily worked by an assistant. The surgeon should have his hand placed on the abdomen of the child so that he can feel the tumor. As the intestine is inflated he will gradually feel the colon becoming distended, and he can regulate the amount of air introduced and stop it as soon as he feels the colon is distended as far as is safe. If the plan succeeds and the invagination is reduced he will suddenly feel the tumor disappear from under his hand, and the air will become diffused over the whole abdomen, so that what was at first distention of the colon is now a uniform distention of the abdomen. He attaches more importance to this sign than to the sudden disappearance of the tumor as an indication that the intussusception has been reduced, because this latter sign is very liable to mislead. It frequently happens on inflating the intestine that the air causes a change in the position of the tumor, and it disappears from under the hand without the invagination being reduced, and if reliance be laid on this sign it may be thought that the intussusception has been relieved when this is not really so. The writer has more than once been deceived by this, and therefore he always looks out for the sudden diffusion of the air over the whole abdomen as the characteristic sign of reduction. If this is felt the child should be laid down and put quietly to bed, with as little movement as possible.

The author then passes on to a consideration of the treatment by the introduction of a fluid into the bowel; and in doing this great care must be taken, as serious injury to the bowel has been known to result from this proceeding.

The operation as regards its preliminaries is exactly the same as for the inflation of air. The child is swathed in wool, anesthetized, and inverted; a catheter connected by an india-rubber tube to a reservoir containing a pint and a half of the saline solution is introduced into the rectum, and being packed round with wool, is held by an assistant. The reservoir is now raised to the height of three feet above the anus and the fluid will be felt gradually distending the colon. It should be retained there for a few minutes, and then allowed to escape. An examination of the abdomen should now be made, and if the tumor has disappeared the infant should be returned to its bed and kept warm. No opiate should be given, as this may quiet the child and mask the symptoms, which otherwise would persist if a successful reduction has not been accomplished. Probably,

if the injection does not succeed in accomplishing its object the first time it is used it is wiser and safer not to resort to a second attempt, but to proceed to other measures. Some surgeons, however, recommend a second and a third trial.

A third method of reducing an intussusception other than by operation is as follows (this plan is not often successful, however, and can only be applied under certain conditions; that is to say, when the child's abdominal parietes are thin and there is no distention of the gut, so that the tumor can be very easily felt and almost grasped with the fingers): Place the child thoroughly under the influence of an anesthetic, so that the abdominal muscles are completely relaxed, then seize the gut between the forefinger and thumb immediately below the tumor and by a kneading movement gradually push the tumor backwards along the course of the colon. In this way he has succeeded in reducing an intussusception; but of course it is only applicable to the ileo-cæcal or ileo-colic varieties, and would be scarcely likely to succeed in a case of enteric intussusception. Ordinary massage has also been applied to the abdomen in the course of the colon, but the writer has never succeeded in reducing an intussusception in this way, though he has frequently tried it.

Treatment by operation is a very severe proceeding in infants and quite young children, and is often followed by death. There is a very strong feeling amongst some medical men that abdominal section on an infant under the age of twelve months is almost certainly fatal. But this is not so. Scattered up and down the pages of medical literature will be found many cases of laparotomy in children of this tender age which have terminated successfully, since Mr. Howard Marsh reported the first known successful case in 1875 in an infant six months old. Dr. Wiggin, in the *Medical Record* of January 18, 1896, has recorded sixty-four cases which he has collected of laparotomy undertaken for the relief of intussusception in infants under one year of age. Of these, twenty-one recovered and forty-three died, giving a mortality of 67.2 per cent.

Dr. Wiggin goes on to say: "If we count only the operations, successful and unsuccessful, that have been performed since the perfected technique of abdominal surgery has become generally known — say since 1889—we have a total of eighteen cases, of which fourteen were successful and four unsuccessful, giving a still lower percentage of mortality, or 22.2 per cent., which the writer believes is a fair estimate of the risk to-day of abdominal section performed on a young infant for the relief of this disorder, if performed within the first forty-eight hours of the onset."

Dr. Wiggin has drawn his statistics from cases which have been recorded in the medical journals, and we all know the very natural tendency there is for surgeons to record successful cases and leave unsuccessful ones unpublished. To make the statistics of any value, we ought also to know how many cases each surgeon who records a successful case has operated on unsuccessfully.

With regard to the technique of the operation: The incision is best made in the median line, as it enables one to deal more readily with every part of the abdominal cavity. After the abdomen has been opened every care should be taken to prevent the escape of the intestines from the abdominal cavity; for a very considerable percentage of the mortality is due to this. If the intestines are allowed to escape they at once become distended with air, and there is always great difficulty in getting them back. Often a considerable amount of manipulation is necessary, which injures and bruises the intestines and leads to a fatal issue. The author therefore always makes a small incision into the abdominal cavity, only sufficiently large to admit of the introduction of two fingers, and as soon as the peritoneum is incised introduces a flat sponge so as to prevent the bulging of the intestine. He then passes a finger down by the side of the sponge and explores the abdomen. There is generally no difficulty in feeling the tumor if it is of the ileo-cæcal variety, in the right inguinal region, and when found the finger is carried along the course of the colon until the lowest limit of the tumor is reached. When this has been done the finger and thumb, which is now also introduced, grasps the intestine just below the tumor, and by gradually working along the colon and grasping successive portions of the gut, the intussusception is pushed backwards until it is finally reduced. All this is done entirely within the abdomen and without allowing the escape of a single coil of intestine. When reduction can be accomplished in this way it is done with a minimum amount of risk, but unfortunately it does not always happen that this plan succeeds. If the intussusception has existed for some time, so that adhesions have

formed, or if it is very acute, so that the intussusception is much swollen and congested, it will be found that the invagination cannot be reduced. Under these circumstances it will be necessary to enlarge the abdominal incision and bring the tumor up to the surface of the wound. This must be done with great care and gentleness, and all protrusion of the rest of the intestine must be avoided if possible. When the tumor has been brought into view the intestine is seized with the finger and thumb of the left hand below the invagination, so as to fix it, and then the intussusception is steadily pushed in an upward direction and in this way reduced. On no account should any attempt be made to reduce the invagination by traction on the entering tube.

Occasionally it happens that in cases of intussusception of long standing it is found that the invagination is irreducible; or it may happen that on opening the abdomen the intussusception is found to be in a state of incipient gangrene. What is to be done under these circumstances? There are three plans which may be pursued: 1. To make a longitudinal incision into the intussuscipiens and draw out the intussuscepted part, cut it off, and suture the intussusceptum and the intussuscipiens. 2. Resect the invaginated portion of gut and do an end-to-end anastomosis of the two cut ends of the gut. 3. Form an artificial anus.

The first mode of proceeding is best carried out by what is known as Maunsell's method. This consists in making a longitudinal incision in the intussuscipiens; through this is made to protrude, by gentle traction, the intussusceptum, until its neck appears outside the opening in the intussuscipiens. The base is then transfixed with two fine straight needles armed with horsehair, and the intussusceptum is amputated a quarter of an inch above the needles, leaving a stump beyond them. The needles are now pushed onwards, so that the sutures pass through the invaginated bowel, and the horsehair is then caught up and divided in the interior of the bowel, and the two ends tied on either side so as to unite the intussusceptum and intussuscipiens. These ends are left long and used as retractors to prevent the stump slipping back, while rows of sutures are being placed through the two cut surfaces of the bowel and tied. This having been done they are cut off short, the stump is pushed back into the bowel, and the longitudinal slit closed by a Lembert suture.

The second plan consists in excising the invagination and a wedge-shaped piece of the mesentery and approximating and uniting the two cut ends of the bowel. This is the ordinary operation for resection of a portion of the bowel, with which all are familiar. The cut ends after the resection may be joined in several different ways: by the Jobert-Lembert suture, by Maunsell's method, by Senn's plates, by Mayo Robson's or Allingham's bobbin, or by Murphy's button.

Of the third method to which he referred—the making of an artificial anus above the intussusception by opening the gut in this situation and attaching the margins of the opening to the external wound—little allusion is made, because it is not an operation of the present day. It was formerly advocated because it was the most rapid way of completing the operation, but now that we can do an end-to-end anastomosis as rapidly as we can make an artificial anus there seems to be no object in doing what is after all a very imperfect operation, and leaves the patient, if recovery results, in a sadly mutilated and distressing condition.

IODVASAGEN AS A SUBSTITUTE FOR INTERNAL ADMINISTRATION OF SALTS OF IODINE.

LEISTIKOW (*Monatshefte für Praktische Dermatologie*) calls attention to the fact that the mouth administration of the iodides of potassium, sodium or rubidium is attended with marked disadvantages, since it is liable to occasion catarrhal involvement of the mucous membrane of the mouth, nose, stomach, pharynx, and bronchial tubes, or rheumatoid pains, palpitation of the heart, and iodine dermatitis. Under such circumstances it has been the custom to abandon iodides, using mercury instead, or to employ enemata of potassium iodide. This latter method of administration is not one to be recommended, since even if the rectum tolerates the drug the systemic effects are the same as those produced by mouth administration. He has, however, had excellent results in the administration of the drug in the form of iodvasagen inunctions. In all he has employed it in twenty of his private cases. There are two preparations, one containing six, the other ten per cent. of iodine. The former is to be preferred, since it does not produce follicular inflammation. The application is made exactly as is the mercuric inunction—forty-five grains of iodvasagen are daily

rubbed in for ten minutes; the first day the left arm being selected; the second the right arm; the third the breast; the fourth the belly; the fifth the left leg; the sixth the right leg. The rubbings are continued for about three weeks. In four cases the rubbings had to be discontinued because of violent naso-pharyngeal catarrh. The remaining cases showed no reaction whatever, and the specific symptoms rapidly disappeared. From his experience Leistikow draws the conclusion that iodvasagen inunctions are an admirable substitute for the internal administration of the salts of iodine.

THE AMBULATORY TREATMENT OF FRACTURES OF THE LEG.

FISKE presents a *résumé* of the ambulatory treatment of fractures of the leg (*Medical News*, Feb. 13, 1897). He calls attention to the fact that after the discussion in Berlin in 1894 of the ambulatory treatment of fractures of the lower extremity considerable interest in the subject was aroused, and although nothing really new or novel was offered, still it has caused a somewhat more extended use of this method of treatment. The ambulatory treatment of leg-fractures seems to be regarded by some as new, and by others as merely the adoption of views that first found expression some thirty years ago. The method of which he speaks in this paper is in use in the Roosevelt Hospital fracture service, and at the time of its introduction by Dr. John McG. Woodbury was new as regards certain principles, namely, the time when the patient was instructed to walk on the injured limb, and the locomotion of the patient without the aid of crutches; and in speaking of the ambulatory treatment of fractures the writer has reference particularly to the large number of cases in the Roosevelt fracture service where the patient was allowed and encouraged to walk at once, without crutches or supporting braces other than the protective splint directly applied to the injured member.

The splint used in these cases is the plaster cast, so applied as to extend from the toe-tips up to and around the tuberosity of the tibia, so that in walking the greater portion of the weight of the body is supported by the circumference of the upper part of the cast. After reduction of any existing deformity, the limb being held in the proper position, the splint is applied as follows: Beginning at the toe-tips and extending to the knee-joint, the limb is firmly and smoothly bandaged with an ordinary muslin roller; over this is applied the plaster-of-Paris cast. No padding with cotton is made use of, the object being to have the splint exert equal pressure at every point, and so provide absolute fixation. In many cases as soon as the plaster is perfectly hard the patient may walk without any other supporting apparatus. As a rule, however, he is instructed to keep his leg in the horizontal position for twenty-four hours, and if at the end of this time the splint is comfortable and there is no tendency of the toes to swell, he is allowed to walk.

In the treatment of any fracture there are certain important indications to be borne in mind. The surgeon must (1) reduce the deformity; (2) maintain such reduction; (3) fix the fragments and protect the limb; and (4) attend to the general condition of the patient. The last consideration is of especial importance, and emphasizes the desirability of keeping our fracture cases out of bed. It applies equally well to children, to adults, and to old men and women. Fiske cites the case of a man seventy-two years of age suffering from a Pott's fracture, who was up and about on the eighth day after the receipt of the injury, and able to walk without the aid of crutches or cane. These statements apply to all fractures, including even compound fractures, when observation for a few days has shown that no infection exists. In the ambulatory treatment of fractures the general condition of the patient is better maintained, less atrophy of the injured limb takes place, and the stiffness of joints in the neighborhood of the fracture is much less pronounced than in those cases which are confined during convalescence. The questions to be decided in considering the advisability of this method of treatment relate to the selection of cases, the form of apparatus to be used, the time when the patient is first permitted to walk on the splint, the duration of treatment, and the advantages gained and risks incurred.

The author has never seen a fracture of the leg which at some time during the healing process was not suitable for the ambulatory splint. There are many cases where the accompanying edema is excessive, and others where there is a considerable effusion of blood. In these cases the surgeon should apply equable pressure throughout, fix the fragments, raise the leg, and keep the patient in a recumbent position until the effusion is absorbed and the swelling disappears. The walking cast is then to be applied, and the patient is allowed

to be up and about. It is a great advantage to apply the plaster cast immediately after the receipt of the injury, and thus by the firm, even pressure which it exerts to prevent edema or effusion from occurring. In compound fractures the limb should be made thoroughly aseptic, an aseptic dressing applied, and the fragments fixed. If infection does not occur the ambulatory splint is applied later, and the patient then may begin to walk. When there is an extensive injury to soft parts the patient must be kept in the recumbent position, with the leg elevated, but in these cases the ambulatory splint should be applied as soon as the condition of the leg warrants it.

The plaster cast is the only one that has been used in the Roosevelt Hospital fracture service. The ordinary cast varies in thickness from one-eighth to one-fourth of an inch, being thickest at the ankle and at the upper circumference where it grasps the head of the tibia. The plaster-of-Paris used must be of the best quality. At Roosevelt Hospital use is made of two kinds of plaster bandages, one being the ordinary gauze roller impregnated with plaster-of-Paris, the other a stiff starch bandage similarly impregnated. A layer of the common plaster bandage is first applied, and this is followed by a layer of the starch plaster bandage; over this is built the cast with the common plaster-of-Paris bandages. By thoroughly incorporating these bandages into one mass a cast is made which is fairly light and yet possesses some elasticity, due to the starchy element; and so, while it affords absolute fixation, it is not liable to crack or break when the patient walks.

In an uncomplicated case when an immediate application of the cast has been made before the occurrence of edema, the patient is usually allowed to rest for twenty-four or forty-eight hours, and then if the toes are not swollen and the splint is comfortable he begins to walk. At first his gait will be awkward; he may be nervous and afraid to trust his weight on the plaster cast; but with a cane he will soon learn to balance himself, and in a short time he will require no support except that afforded by the splint.

As regards solid bony unions, in the great majority of cases no time is gained by this method of treatment. The after-treatment is considerably shortened, however, as the remaining stiffness is less and more easily relieved. The average length of time the splint has been worn is from twenty-eight to thirty-five days. In a few cases it has been worn for six weeks, the time depending on the amount of callus thrown out and the completion of consolidation. After the removal of the splint the leg is douched alternately with hot or cold water several times a day, in conjunction with massage, until all stiffness has disappeared.

Some of the advantages of this form of treatment consist in the fact that the patient is kept up and about, less muscular atrophy occurs, there is less stiffness of adjacent joints, the period of after-treatment is considerably shortened, and the general health of the patient is maintained. It must also be remembered that the chances of hypostatic pneumonia occurring in elderly patients are much less if we keep them active. Quite a number of fractures of the leg have been treated in people addicted to the use of alcohol, and the reporter has never seen a case of delirium tremens occur when the ambulant splint was used from the first.

The chief risk is incurred during the application of the cast. To properly apply a cast of this kind requires a skilled operator and a skilled assistant. The importance of skilled assistance and intelligent co-operation is just as great to the surgeon in the reduction of the deformities attendant upon fractures as it is in the reduction of any other bone or joint deformity. The position of the limb, and skill in holding it during the application of the cast, are most important factors in connection with the success of this procedure. In oblique fractures the splint must be worn until the callus has been absorbed and the fragments have united firmly, so that there is no possibility of the upper fragment becoming displaced later by the weight of the body.

In many cases of Pott's fracture the deformity is so extreme and typical that a diagnosis is made at sight. In other cases there is no outward displacement, and very little swelling, and a correct diagnosis is arrived at only after a painstaking examination. The existing deformity is usually corrected easily by flexing the foot to a right angle and making extreme inversion. This position must be maintained until the splint has been applied and the plaster has set. Of the fifty-six cases of Pott's fracture the ambulatory splint was applied in thirty-eight instances during the first twenty-four hours; in eighteen cases the cast was applied from three to twenty-one days after receipt of the injury.

Fractures of the fibula are of very frequent occurrence. A fracture of the shaft fre-

quently shows little or no displacement, and as a rule simply requires the application of the plaster cast. Fractures of the lower end of the fibula frequently show some deformity, and may be accompanied by inward or outward displacement of the foot. A fracture of the lower end of the fibula accompanied by some outward displacement, but where the internal malleolus is intact, should be regarded as an incomplete Pott's fracture, and calls for the same treatment. Fractures of the lower end of the fibula with some inward displacement call for some eversion as well as flexion to a right angle before application of the plaster cast. Out of 110 fractures of the fibula, 101 were of the external malleolus or at the lower third. In 81 cases the ambulatory splint was used from the first. In the remaining cases of this group this treatment was inaugurated from two to twenty-three days from the time of injury, the cases including one compound fracture at the middle third of the bone where the walking splint was applied on the fourteenth day.

Fractures of the tibia are more serious, indicating as they do the receipt of greater violence, and may be accompanied by a considerable degree of shock. Many of the simple fractures do not show much displacement, and as a rule are readily put up in a correct position by having a good deal of extension made in the direction of the limb during the application of the cast. In the twenty-two fractures of the tibia, nine occurred at the lower third and thirteen at the middle third. Sixteen were treated from the first by this method, and six from five to eleven days after receipt of the injury, including one compound fracture on the fifth day.

Fractures of the tibia and fibula require the greatest care in putting them up properly. The surgeon must bear in mind the tendency toward a posterior sagging of the fragments during the application of the cast, and considerable extension must be maintained while this is being done. Of the fourteen cases of fracture of both bones, six were treated from the first by this method, and eight from the sixth to the fourteenth day. In fractures of the middle third of both bones, when there is a tendency toward displacement of the fragments, the splint should include the knee-joint and extend well up on the thigh. On the tenth day the bones will be pretty firmly glued together, callus will have been thrown out, and ossification will be under way. The splint is then removed, and if the limb is in good order the ambulant splint is applied up to the head of the tibia.

The osteoclasis cases, twenty-four in number, are here considered because many of them have been most perfect examples of the ambulatory treatment of fractures of both bones about the middle third. They also show the value of the immediate application of the plaster cast, applied as it was without padding, and controlling or preventing the occurrence of edema and effusion. It has been common to see these little children after the first week stand and attempt to walk, and after that time they are always encouraged to do so.

The cases of non-union following fracture, eleven in number, which are presented were of no little interest, as several of the patients had been confined to bed for a considerable period. Not one case of fracture treated by the ambulatory method ended in this unfortunate way. The ambulant splint was applied to these cases, and the patients were encouraged to walk; if union did not occur within a reasonable time the fragments were thoroughly needled. This method has been very successful.

Two cases of the Trendelenburg-Hartley operation are considered, as they show the value of the ambulatory splint in compound fractures. On the tenth day as a rule the dressing was removed, the stitches taken out, and a new cast applied, and frequently by the fourteenth day the patient was able to walk very well. This is a very good showing when we bear in mind that a good-sized wedge had been removed from the tibia and a linear osteotomy performed on the fibula.

In 226 fractures of the leg the ambulatory cast was applied during the first twenty-four hours in 159 cases, about seventy per cent. of the total number.

SYPHILITIC DISEASE OF THE HEART-WALL.

SIDNEY PHILLIPS in *The Lancet* of January 23, 1897, presents an exhaustive paper with the above title, in which he summarizes his conclusions as follows: 1. Syphilis may produce gummata or general fibroid change. 2. Gummata in the left ventricle, except of very small size, are dangerous to life, and when near the apex of the left ventricle may cause sudden death. 3. Gummata in the left ventricle may be suspected if in an individual with syphilitic antecedents there occur signs of derangement of the action of the left ven-

tricle with symptoms of defective or embarrassed action, especially angina pectoris, tachycardia, syncopal or epileptiform attacks; or in the right ventricle when dyspnea otherwise unaccountable occurs. 4. Extreme feebleness of the heart without dilatation, gradually increasing, in young or middle-aged persons who have had syphilis, suggests syphilitic disease on the right side of the heart. 5. Dilatation of either side of the heart in syphilitic persons may result from syphilitic fibrosis. 6. Hypertrophy of the heart without ascertainable cause and without corresponding increase in strength of heart suggests syphilis. 7. Aneurism of the heart-wall may result from syphilitic local lesions, and may be fatal with or without rupturing. 8. It is probable that gummata and fibroid disease in early stages may be relieved or cured by the usual specific treatment, and there is every reason to believe that syphilitic lesions of the heart-wall are not less amenable to treatment in their early stages than syphilitic lesions elsewhere, though no cure can be expected where advanced tissue changes are already produced.

In what has been written attention has been devoted only to syphilitic disease of the heart-wall apart from valve disease. It is certain that the small number of cases given in the table must represent a much larger number of unrecorded fatal cases—cases in which no necropsy was performed, or the fibroid condition was not recognized or reported—and a very greatly larger number of cases of persons who have suffered from syphilitic heart lesions without their producing death. It is therefore certain that syphilitic heart disease is more common than is generally recognized. And its importance is the greater because it affects persons at an earlier age than the usual degenerative heart conditions, and may insidiously advance till it causes sudden death in persons in the prime of life and of apparent health.

There can be little doubt that syphilitic heart affections must affect the administration of anesthetics, more especially as a life-long disease like syphilis is apt to produce local conditions that not infrequently require operative interference. Certainly cases are brought in of death under an anesthetic from fatty disease of the heart, in which the chief evidence of that condition is that the patient died under an anesthetic; and at the moment of writing a case is recorded of death under the administration of the A. C. E. mixture in which "the right ventricle was found dilated, with fatty infiltration of its walls; the left ventricle was also dilated and there was some fibrosis of its walls." Dr. Kirk found that chloroform, if we may judge from a few cases, is liable to give dangerous results in syphilitic subjects.

DOUBLE OVARIOTOMY AT THIRD MONTH: DELIVERY AT TERM.

PERRIER read before the Académie de Médecine, Paris, in January, notes of a case in which Mouchez, of Sens, removed both ovaries in a woman three months pregnant, for double cystic disease. The patient made a good recovery, and a live child was born at term. Numerous ovariotomies have been performed on pregnant women, but removal of both ovaries during gestation is unusual, not a dozen cases having been reported. Mouchez insists that operation as early as possible is indicated when double cystic disease is diagnosed during pregnancy. The danger of waiting is greater than the danger of operating.—*British Medical Journal.*

SOME RECENT ADVANCES IN THE TREATMENT OF ATROPHIC RHINITIS.

RALPH W. SEISS, in the *Medical News* of November 28, 1896, tells us that among drugs which have given good results as stimulants in the treatment of this disease thymol in his opinion still continues in the first rank; it may be used in watery solution with alcohol and glycerin, but is much better employed dissolved in one of the petroleum oils; albolene, glymol or benzoinol may be used, the thymol being in the proportion of from three to ten grains per ounce. The former strength can be borne by most patients, the latter only by a few in whom tolerance has been established by much previous treatment. Frontal headache, lacrymation, or a severe stinging sensation in the nose should always be regarded as indications for the use of a weaker solution. Numerous drugs may be usefully employed in combination with thymol, among them menthol, pine-needle oil, and eucalyptus, in the strength of from one to three per cent. Sanguinaria and galangal were once much used as stimulants in this disease, but they are exceedingly apt to act as severe irritants, and owing to this and their unpleasant taste have been largely abandoned. Next to thymol, europhen has given the greatest satisfaction in the writer's

hands; it may be used in the form of an ointment as above suggested, or of a dusting-powder in combination with stearate of zinc; or in advanced cases where marked stimulation is required the pure powdered europhen may be used. Although slightly less efficient than thymol in the average case, it suits some better, is always less painful, and its use may be regarded as one of the distinct advances in nasal therapeutics. Aristol, iodoform and allied compounds are also a benefit, but have more disadvantages than the one first named. Cinnamon oil has been shown to be the most decidedly antiseptic of the volatile oils, and is particularly valuable in conditions of nasal and pharyngeal sepsis; it may be used in the form of a spray, from three to ten per cent. being added to the ounce of albolene. It appears to be entirely non irritating, produces a grateful feeling in the nose, and its odor is pleasant and not persistent. Whichever oil-spray be employed it is essential that it be thoroughly applied to a perfectly clean mucous membrane, with a suitable apparatus, and with pressure of at least twenty-five pounds per inch.

Stimulation may be as easily overdone in cirrhotic catarrh by drugs as by mechanical means. MacDonald observes that "it is somewhat doubtful whether we are any more justified in stimulating the nasal mucous membrane in atrophic rhinitis than a cirrhotic liver." The warning and the pathological suggestion contained in this sentence are both exceedingly valuable. It cannot too often be reiterated that all violent measures in this disease defeat themselves by causing the very pathological processes which they are intended to cure. Purely surgical measures have but a limited value in cirrhotic catarrh; dead bone must be carefully removed, the minimum of disturbance of surrounding tissues being carefully observed; nasal spurs, or similar obstructions, should not be operated upon; and turbinated tissue should not be removed, except under cases of absolute necessity, the constant tendency to cicatrization and contraction in this disease never being lost sight of. He has seen several cases in which extensive intranasal operations had appeared to light up the atrophic process, and all operations on the turbinated tissues are to be regarded as at least unfortunate necessities. Jonathan Wright has had a similar experience, and forcibly points out how in vascular engorgement cauterization or other intranasal operation does not restore the efficiency of the damaged muscular apparatus, but by the formation of a scar favors the tendency to fibrosis. The use of skin-grafts as suggested by Laborderie at first sight appears to be one of the most valuable surgical measures that has been brought forward in atrophic rhinitis, the very essential of the disease being the permanent loss of epithelium. Unfortunately the only available grafts which have been suggested are those which are covered by squamous epithelium, such as the intradigital membrane of the frog, whereas what is wanted is a membrane covered with columnar ciliated epithelium. The writer's efforts to graft such a membrane have been total failures, and it is doubtful whether it is possible to obtain this very desirable result. Laborderie claims that nearly half the grafts made from the skin of the frog take effect, and advises the use of from ten to twenty grafts in all advanced ulcerative cases. Even if this admirable result could be obtained by the average operator, a surface covered with pavement-cells and incapable of ridding itself of adherent mucus would be the effect, and the patient would be no better off than before.

The internal treatment of cirrhotic catarrh is not satisfactory. The only drug which can be considered to have the slightest specific effect is iodine. This may be given in the form of iron iodide or of potassium iodide, and certainly appears in some cases to lessen the tendency to inspiration and to exert a beneficial influence on the course of the disease. Tonics are of course needed in many cases, and hygienic measures are naturally of the first importance. Climatic change appears to arrest the disease in a certain proportion of cases, and should be tried when possible, especially after local treatment appears no longer beneficial.

Perhaps the most serious danger of advanced cases of nasal atrophy and suppuration is aural complications. A large proportion of cases have recurrent attacks of acute Eustachian salpingitis, a certain proportion of these going on to suppurative disease of the middle ear and perforation of the membrana tympani. Especially is this the case where the nasal douche, snuffing fluid from the hand, or similar measures in which hydrostatic pressure is brought to bear, have been employed. Colonies of streptococci are thus easily forced into the Eustachian tubes, with the result of setting up suppurative conditions extremely prejudicial to the welfare of the patient. With a view to the prevention

of these complications cleansing methods should always be by some such method as has been advised. Patients should also be carefully warned to avoid forcibly blowing the nose, as in this way the Eustachian tubes are frequently infected. The use of Politzer's inflation is even more dangerous, and should never be employed in cases of cirrhotic catarrh until absolute cleansing and antisepsis of the nasal cavities have been carried out. If suppurative salpingitis is already established the most satisfactory mode of treatment is by means of the Eustachian syringe-catheter. This should be introduced through the nose, and the folds of the tube carefully washed out with a warm, mild, antiseptic formula — boric acid and salt being commonly used by the writer. Treatment should be continued daily for some time, the tympanum being meanwhile carefully let alone, unless already actually diseased. If the middle ear be already involved antiseptic irrigation and, if necessary, an early paracentesis should be performed. Recurrent acute attacks of suppuration almost certainly result sooner or later in thickening of the drum and anchylosis of the ossicles in all neglected cases, and deafness and tinnitus aurium are almost the rule in such.

THE TREATMENT OF DIPHTHERIA WITH ANTITOXIN.

Additional testimony is constantly accumulating to establish beyond doubt the utility of antitoxin in the treatment of diphtheria. A recent contribution can be found in the report made by FURTH (*Münchener Medicinische Wochenschrift*, 1896, No. 29, p. 669) of 150 cases thus treated at the medical and surgical clinics of the University of Freiburg. This report is supplementary to a previous report of 100 cases treated in the same way. Of the 150 cases diphtheria bacilli were found in 123. In the remaining 27 the diagnosis was confirmed by subsequent tracheotomy; of these, 13 terminated fatally, and were examined post-mortem. Twelve cases in which diphtheria bacilli were not found were treated with antitoxin, but they are not included in these statistics. In 34 of the 123 cases streptococci also were found, but the examinations were made twenty hours after inoculation—a time thus unfavorable to the development of streptococci. In five children with laryngeal diphtheria, of whom three required tracheotomy and two died, diphtheria bacilli were cultivated from the pharynx, although this was free from membrane, swelling, or redness. One of these children had measles also, so that the diagnosis was a matter of considerable significance. Of the 150 cases, 122 were uncomplicated and 28 complicated. The complications included measles (16), scarlatina (5), measles and scarlatina (2), measles and typhoid fever (1), and tuberculosis (4). Among the 122 uncomplicated cases there were 12 deaths (9.8 per cent.); tracheotomy was required in 26 cases (21.3 per cent.), with nine deaths (34.6 per cent.). Among the complicated cases there were 11 deaths (39 per cent.); tracheotomy was required in 9 cases (32 per cent.), with 6 deaths (66.6 per cent.). Of the 150 cases death occurred in 23 (15.3 per cent.).

Notwithstanding the coincidence of epidemics of measles and scarlet fever, the mortality was lower than in any previous year. The proportion of cases requiring tracheotomy was also smaller, and the mortality among these also lower. Over and above the complications the disease itself was in many instances of unusual severity. While in former periods the mortality in early life had varied from 60 to 100 per cent., in the present collection of cases there were only three deaths among nineteen children under two years of age, although eight of these cases required tracheotomy. The dose of antitoxin employed was larger than previously. Of the fatal cases two were septic, without involvement of the larynx. Both of these came under observation on the fourth day of the disease, and death took place in sixteen and sixty-eight hours respectively. In six cases death resulted from descending croup; all required tracheotomy. In two cases death was due to diffuse bronchopneumonia, after the local process had terminated. Finally, in two of the cases death resulted from paralysis of the heart on the sixth and forty-first days of observation respectively.—Editorial, *Medical News*, Nov. 28, 1896.

PALLIATIVE OPERATION FOR CANCER OF THE PROSTATE.

DESNOS (*L'Union Médicale*, No. 51, 1896) states that intervention is indicated when a patient is tortured by pains radiating to the perineum and the thighs. Pre-rectal incision is made, the prostate is freed from its adhesions, and the greater part of the tumor is resected. As a result of relief of pressure the pain is immediately relieved, and this persists.

APPENDICITIS ABSCESSES IN POSITIONS REMOVED FROM THE IMMEDIATE NEIGHBORHOOD OF THE APPENDIX.

PIARD (*Gazette Médicale de Paris*, Dec. 19, 1896) writing on this topic states that a careful study of the literature shows that during the course of appendicitis abscess may form in regions other than those immediately surrounding the appendix; that these abscesses are found in the iliac cellular tissue, the peritoneal cavity, the anterior abdominal wall, the liver, the pleura, the lung, and in various more remote organs, such as the brain, the cord, the kidney, and the spleen. These abscesses are the expression of a diffuse infection either by the medium of the contaminated peritoneum or by the canals of the vessels of the appendix. They are rare and present all the varieties of local inflammation and general septic infection. This formation of secondary abscesses is an added reason for radical operation.

Reviews.

A SYSTEM OF PRACTICAL MEDICINE BY AMERICAN AUTHORS. Edited by Alfred Lee Loomis, M.D., LL.D., and William Gilman Thompson, M.D. Volume I: Infectious Diseases. Pp. 985.
New York and Philadelphia: Lea Brothers & Co., 1897.

If the first volume of this System, purporting to be an exhaustive study of the diseases included within the domain of practical medicine, may be accepted as an indicator of the scientific value of the System in its entirety, we may well say that the work promises to surpass anything of the kind that has been presented to the profession within recent years. A glance at the list of contributors to this volume is in itself a sufficient guarantee of the value of the various sections, as there is not one who has not by his previous writings placed himself in a position to justify his selection to take part in the construction of such an important work as that now under consideration. While to do justice to each of the authors would be impossible within the limits of this short notice of the work, yet some of the articles are of such importance that they call for special comment.

The volume begins with an article upon malaria by William H. Welch and William S. Thayer, the former treating of the Definition, Synonyms, History and Parasitology of the affection, while the latter assumes the task of describing its Etiology, Pathological Anatomy, Symptoms, Diagnosis, Prognosis, and Treatment. This section is one of the most valuable in the volume; it represents in every particular the extent of our present-day knowledge of the disease, and a great deal is done by Dr. Welch in his classification of the malarial parasites to make clear much that has hitherto remained obscure in regard to the individuality of the organisms concerned in the production of the different varieties of the disease. There is undoubtedly still a great deal to be learned concerning the varieties of the *Hæmatozoon malariæ*, especially in the æstivo-autumnal form of the disease, but the deductions of Dr. Welch are to be welcomed as tending to lessen somewhat the obscurity that surrounds this subject. For the variety, or varieties, of organisms active in the production of the æstivo-autumnal form this writer suggests the name of *Hæmatozoon falcipárum*, indicating thereby one of its principal characteristics—viz., that it is a crescent-producing organism. Although crescents belong exclusively to the æstivo-autumnal parasites, yet their shape is not always crescentic or falciform, and to designate this parasite Welch prefers the adjective falciparum instead of that of falciforme as suggested by Antolisei and Angelini, which would indicate that the shape is always falciform. We believe that the majority will agree that this suggestion of Dr. Welch's is a happy one.

The section allotted to Dr. Thayer is handled in a thorough and painstaking manner and adds much to the value of the article.

Enteric Fever and Influenza, especially the former, have been assigned to J. C. Wilson. The article upon Enteric Fever is consistent in merit with recent publications of the author upon this subject, and confirms his position as an authority upon this disease. Of especial merit is the writer's description of the pathology and clinical course of the disease. The subdivision upon treatment is also thorough and represents his well known views concerning the management of the affection.

In this connection we cannot refrain from expressing the regret that the Editor has seen fit to interject into this article, as well as several others, what evidently are scraps and bits of his own personal experiences, and which he has supplemented by the insertion of numerous temperature charts that bear no part essential to the description of the disease as essayed by the author of the article. We consider that this serves no useful pur-

pose and tends only to mar the symmetry and evenness of the author's description.

The article on Dysentery, by Hamilton A. West, is an exhaustive study of the disease, the value of which is much enhanced by the insertion of colored plates by Councilman and Lafleur, previously published in the Johns Hopkins Hospital Reports.

The variolous diseases are described by William M. Welch, and the writer's familiarity with these affections is apparent upon every page. A number of reproduced photographs, taken from life, and representing the several types of variola, add greatly to the graphic description in the text.

William Hallock Park has been entrusted with the subject of Diphtheria, and in a comprehensive article of some sixty pages has succeeded in giving a description of the disease that will repay careful scrutiny. His conclusions regarding the diphtheria antitoxin are extremely emphatic and bear out the earlier anticipations as to the curative value of this agent. This is especially gratifying in view of the recent attempts in certain quarters to cast a doubt upon the efficacy of antitoxin treatment and thus to initiate a reaction against its employment.

The subject of Tuberculosis, by Osler, has been handled in such a way as only this distinguished pathologist and clinician is capable of doing. In many respects the general arrangement of the article is similar to that upon the same subject in the writer's Practice of Medicine, which will ever hold a place as a classical description of this infection.

It is impossible to do justice, save in an extended review, to the many other articles of great merit contained in this volume. The work is most ably edited, the assignment of the various sections has been made with great judgment, and there is lacking in an extraordinary degree that want of continuity and evenness that constitute such striking defects in many of the "Systems" it has been our duty to review.

The preparation of the Index, the quality of the paper used, as well as the printing, and, in fact, the work of the publisher in general, leave nothing to be desired.

We can warmly recommend the book as a standard work of reference.

High Altitudes for Consumptives. By A. Edgar Tussey, M.D.
Philadelphia: P. Blakiston, Son & Co., 1896.

This is a small octavo volume of less than 150 pages devoted to the subject named in its title-page. The author tells us that he owes the profession an apology for offering this book to them, which is not a very encouraging statement for the reviewer to find in the first line of his Preface, for a book that is of any value needs no apology. The book is written in an easy, somewhat non-medical style, and is perhaps quite as well suited to lay reading as to medical reading. Now and then through its pages we find a quotation from Emerson or a dash of poetry, and the author breaks into an expression of sentiment in description, such as follows: "The gnarled and storm-developed giant of the open landscape became so in virtue of the necessity which was imposed upon it to maintain its life under numerous difficulties." We presume that the giant referred to is the oak, but as the words we have quoted form the beginning of the paragraph such a conclusion is only a supposition. Any book which tends to familiarize physicians with the real uses of climate in the treatment of disease is of value, but this one is hardly sufficiently exhaustive to be considered as a competent authority to govern the remedial applications of climate.

Injuries and Diseases of the Ear: Being Reprints of Papers upon Otology. By MacLeod Yearsley, M.D.
London: The Rebman Publishing Co., Limited, 1897.

This is a tiny volume of forty pages, containing many references to current literature and dealing with the following practical subjects: Artificial Membrana Tympani, Foreign Bodies in the Ear and Their Treatment, What Not to Do in Diseases of the Ear, The Use of the Pneumatic Aural Speculum, The Care of the Ear in Children, and Aural Reflexes.

Nearly all the material in the volume comes from the pages of *The Medical Times* and *Pediatrics*.

Lectures on Renal and Urinary Diseases. By Robert Saundby, M.D. Copiously illustrated. Second Edition.
Philadelphia: W. B. Saunders, 1897.

There is probably no writer in the English language who is better or more favorably known in connection with the subjects dealt with in this volume than is Dr. Saundby, of Birmingham. The volume in reality consists of a reprint of a series of lectures delivered by Dr. Saundby, but to these lectures have now been added in the second edition much valuable information derived from bibliographical and statistical research. The volume as it stands to-day is probably the best brief summary of what we know concerning these

subjects of any that can be obtained. Every important chapter closes with a fairly copious and certainly representative bibliography of the subject which has been discussed, so that the reader who desires to seek further information can readily turn to more exhaustive and complete descriptions of the disease.

Those who are familiar with the interesting summaries published from time to time in the Birmingham *Medical Review* and in other publications to which Dr. Saundby contributes, will be anxious to obtain these lectures in book form.

A Manual of the Practice of Medicine Prepared Especially for Students. By A. A. Stevens, A.M., M.D. Fourth Edition, revised and enlarged.
Philadelphia: W. B. Saunders, 1897.

This book, which has just been received from the publisher, is dated according to the Preface of the fourth edition July, 1896. We have already favorably reviewed in earlier issues of the Therapeutic Gazette previous editions of this little manual. In this edition we are told by the author that he has rewritten several of the articles and also that two Italian physicians are translating the volume into their language. To those students who desire a very succinct and brief account of practical medicine, we can cordially recommend this little handbook.

A Manual of Physiology with Practical Exercises. By G. N. Stewart, M.A., D.Sc., M.D.
Philadelphia: W. B. Saunders, 1897.

That a good, concise, and fairly practical book on Physiology was needed in the medical literature of the day is shown by the cordial reception which has been accorded to the English edition of Dr. Stewart's book. The present volume is an American reprint of the same, and while it bears the date of 1897 it contains a Preface dated September, 1895, which is the date of the Preface in the English version. Dr. Stewart is well known as one of the younger physiologists who has already done good work in this important branch of medical science, and his success in teaching in Cleveland, Ohio, has proved that he has the ability of transmitting his knowledge to the student who desires to receive it. This ability shows itself upon almost every page of the volume before us, which is copiously illustrated and contains a number of colored plates which are more than usually good. There are also many illustrations devoted to the elucidation of descriptions of apparatus and records obtained from such apparatus, and the proper amount of information is given to permit the volume to be used as a laboratory manual as well as a text-book. We doubt not that Dr. Stewart's book will continue to be considered one of the most popular text-books of the day.

Braithwaite's Retrospect of Medicine. Volume CXIV, July to December, 1896.

This volume of Braithwaite's Retrospect closely resembles all previous volumes of this well known publication, which seeks to provide the busy practitioner with a summary of current medical literature. Those who have already found the usefulness of the publication will be glad to know that the one hundred and fourteenth volume has been issued.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections. In Photo-lithochromes from Models in the Museum of the Saint Louis Hospital, Paris. With Explanatory Woodcuts and Text. By Ernest Besnier, A. Fournier, Tenneson, Hallopeau, Du Castel, Henri Feulard, and L. Jacquet. Edited and Annotated by J. J. Pringle, M.B., F.R.C.P. Part VII.
London: The Rebman Publishing Co. Philadelphia: W. B. Saunders, 1897.

The photo-lithochromes (No. 7) in this series represent Eruption from Bromide of Potassium; Hypertrophic Papular Syphilides; Rupial and Early Gangrenous Syphilides, an illustration of particular beauty and value; of Gangrenous Tubercular Syphilide and Gangrenous Gumma.

The text is devoted not only to the diagnosis and clinical features of these eruptions, but takes up the subject of treatment in a thoroughly practical way.

Roentgen Rays and the Phenomena of the Anode and Cathode: Principles, Applications, and Theories. By Edward P. Thompson, M.E., E.E. With a concluding chapter by Prof. William A. Anthony. Profusely illustrated.
New York: D. Van Ostend, 1896.

The title of this book describes its contents exactly, and to those who desire to become *au fait* with everything in connection with this most interesting subject it will convey, as perhaps does no other work in the English language, accurate, scientific, and yet readily understood statements in regard to the production of the Roentgen ray and the means for its application and employment. The latter part of the book is quite copiously illustrated by many skiagraphs dealing with medical and surgical topics. Altogether it contains nearly 200 pages, and its author is to be congratulated upon the production of so useful a manual concerning so interesting a topic.

SYRINGOMYELIA. An Essay to which was awarded the Alvarenga Prize of the College of Physicians of Philadelphia for the year 1895. By Guy Hinsdale, M.D.

This is a brief brochure of over seventy pages, including the bibliography, upon that rather rare form of nervous disease which gives it its title. It is quite freely illustrated and its text provides us with one of the best accounts of the affection which can be found in literature. Certainly the honor of winning the Alvarenga Prize has been increased rather than decreased by its award to this evidence of literary industry. No less than 388 references to the literature of the subject close the volume.

ELEMENTARY BANDAGING AND SURGICAL DRESSING: WITH DIRECTIONS CONCERNING THE IMMEDIATE TREATMENT OF CASES OF EMERGENCY. For the Use of Dressers and Nurses. By Walter Pye, F.R.C.S. Revised and in part rewritten by G. Bellingham Smith, F.R.C.S. Seventh Edition.
Philadelphia: W. B. Saunders, 1897.

This book, as stated by Pye, is practically a reissue of the portions of his well known work on Surgical Handicraft which deal with bandaging, splinting, and the first treatment of cases of emergency. Thus it is a reprint, but so carefully selected, and issued in such a convenient form (indeed the book is small enough to be put in the waistcoat pocket) that it will no doubt be found serviceable to students, internes, and nurses.

There are many practical suggestions, such, for instance, as is found in Walker's method of applying a plaster jacket. This is as follows:

"The jacket may be put on while the patient is lying down flat, or better still, while extended on an inclined plane, with the hands raised backwards above the head and grasping a bar. This is known as 'Walker's Method.' To carry out this plan it is necessary to retard the setting of the plaster. This is effected by soaking the muslin bandages, into the interstices of which the plaster has been rubbed in the ordinary way, in a mixture of mucilage and water (about one ounce to a pint of water). When the roller bandages have been thoroughly moistened they are cut into lengths sufficient to go around the patient and overlap some inches in front. The several lengths are then arranged on the inclined plane so as to form a series of overlapping strips, in sufficient number to secure a three- or four-fold thickness everywhere.

"The cingle having been put on, and the pad adjusted, the patient is placed in the extended position over the strips of bandage, which are then taken up one by one, and their ends crossed over the front of the chest and abdomen, like one loop and a bit of a figure-of-eight. If they have been properly placed it will be found that in this manner a well-fitting jacket of a somewhat hour-glass shape will be made, expanding above for the upper part of the thorax, and below to take hold of the pelvis.

"The patient should be allowed to lie still until the case sets, which it will do in three or four hours."

Correspondence.

LONDON LETTER.

BY RAYMOND CRAWFURD, M.A. OXON., M.D., M.R.C.P.

Another orator has paid his tithe of homage to the memory of John Hunter: this year the mantle of Paget, Savory and other great men who have gone before, descended on Mr. Christopher Heath, lately President of the Royal College of Surgeons. The tendency of past orators has been to depict Hunter as a great anatomist, a learned physiologist, or a profound pathologist; but this year our portrait is of Hunter the Surgeon. In science, as in other spheres of action, coming events cast their shadows before them, and we are not surprised to find that Hunter foreshadowed so many of the giant strides of modern surgery. Thus in his lecture on "Injuries to the Head," Hunter showed himself to be far in advance of his contemporaries, with whom trephining the skull was a matter of routine. He writes: "In cases of fissure of the skull only, it may admit of dispute whether we are always to trepan. If there is no symptom of an injured brain, certainly it will not be necessary. It may not be necessary even when attended with symptoms of an injured brain, for the injury may only be from the concussion, and we never trepan for concussion." And again, in speaking of fractured patella, he says: "Before the year 1750 it was the practice to endeavor to bring the broken ends of the bones as near together as possible, with little or no motion allowed; but after that a fashion arose (for we have fashions in surgery as in everything else, arising perhaps from a person happening to do well who had not been treated in the old way) of letting the parts separate, and of not forbidding motion so strictly. But now caprice has, I believe, had its day, and

we are taught by reason and experience that the parts when cured should be as nearly as possible in their natural position." There is, however, a less modern flavor in the candor with which Hunter remarked of a patient, who died of fungus cerebri, after opening the dura mater: "He died, and I think it is probable I killed him by opening the dura mater." To Hunter too belongs the operation for cure of aneurism by applying a ligature at a distance from the sac, and in the museum of the College of Surgeons is the specimen of this historical case, obtained at the patient's death a year subsequently. The "Treatise on Venereal Diseases," though containing much of permanent value, was much marred by the essential misconception of the identity of the virus of syphilis and gonorrhea — a belief derived from experimental inoculation of himself with gonorrheal matter, accidentally contaminated with the discharge of a chancre. From the chapters on the "Supposed Consequences of Gonorrhea," Mr. Heath culls some very happy sentences. In describing the discharge of the natural mucus of the glands of the urethra Hunter writes: "The small glands of the urethra and Cowper's glands secrete a slimy mucus similar to the white of an egg, not coagulated. This seldom appears externally or flows from the urethra, but during the indulgence of lascivious thoughts, and is seldom or never attended to except by those who are either under apprehension of a gonorrhea coming on, or imagine the last infection is not gone off entirely, and are therefore kept in constant terror by this natural discharge." And in speaking of the discharge of the secretions of the prostate gland and vesiculæ seminales, Hunter says: "It is a discharge of mucus by the urethra, which generally comes away with the last drops of urine, especially if the bladder is irritable, and still more at the time of being at stool, particularly if the patient be costive, for under such circumstances the straining or action of the muscles of these parts is more violent. It has generally been supposed that this discharge is semen, and the disease is called a seminal weakness; but it appears from many experiments and observations that the discharge is undoubtedly not semen." Mr. Heath tells us that he values this common sense teaching so highly that for years he has kept this page in Hunter's works doubled down, in order that he may read out an authoritative statement to those miserable persons who consult the surgeon from time to time for so-called "spermatorrhea."

The orator's valediction struck a note of timely foreboding: "Gentlemen," he said, "I cannot but view the future of this College with some anxiety. The great corporation is, I fear, on the high road to become something very unlike the Royal College of Surgeons of England, which has existed now for nearly a hundred years. Hitherto it has been regarded as the home of surgical science, and its funds have been devoted to the advance of the art of surgery by providing unrivaled opportunities for study in its museum and library. This College will, in my opinion, lose professional prestige and fall in public estimation if its funds should ever be diverted from these legitimate purposes in order to support the interests of individual members of the profession, however worthy in themselves. It will be a melancholy day for British surgery if ever this Royal College should become a gigantic protection society to fight the puny battles of its members, who may happen to come into collision with each other or with the public. It is to the Council, and to the Fellows who elect the Council, that we must look for the maintenance of that high professional position which the College has hitherto occupied, and for the furtherance of the art and science of surgery — *quæ pro sunt omnibus artes.*"

At the Clinical Society of London Mr. Stephen Paget read a most interesting paper on "Voracious Hunger and Thirst after Injury or Disease of the Brain." He had collected notes of fourteen cases pointing to the existence of special centres of hunger and thirst close to the centres of speech, probably in the anterior extremity of the temporo-sphenoidal lobe. A short account was given of each case, including one in his own practice. Four of the patients had received a severe blow on the forehead; two had been struck on the side of the head; two had fallen heavily on the back of the head; two had presented signs of a fracture of the base; and one had fallen from a height, coming down in a sitting posture. In addition to these eleven cases of injury there were three cases of disease: one had abscess of the left temporo-sphenoidal lobe, one had a suppurating cyst in the right temporo-sphenoidal lobe; and one had embolism of the left side of the brain. Eight of the fourteen patients suffered from voracious appetite for solid food, without much thirst; three suffered both thirst and hunger; three had intense thirst without hunger. In none of them was

the primary injury or disease fatal. It was therefore pretty clear that the supposed centres for hunger and thirst were not situated in the immediate neighborhood of the so-called vital centres. Three of the patients had well marked aphasia; it was therefore probable that these centres lay close to the centre of speech, and not improbably connected with the olfactory centre, which some physiologists have located at the anterior extremity of the temporo-sphenoidal lobe. This hunger and thirst was of a degree far in excess of the normal hearty appetite of convalescence, and was not in any of these cases secondary to a traumatic diabetes. The therapeutic indication in this condition was extremely simple, for the patients suffered no obvious digestive disturbance in consequence of the enormous consumption of food and liquid. The voracious appetite lasted, as a rule, for many weeks or months, and then came to an end spontaneously.

Mr. Paget's paper suggests a number of interesting questions: We must admit that the evidence he adduces of localization is considerable; in nearly all the cases the main stress of the injury would have been on the temporo-sphenoidal lobe; but then we should expect the symptom to be present more often in the numerous cases of cerebral disease that affect this region directly or indirectly. Assuming, however, such a localization, what is the channel of connection with the stomach? Seemingly the gastric branches of the vagus. Such an affection comes quite into line with the gastric crises of locomotor ataxia, which Buzzard regards as evidence of a descending degeneration of the vagus, analogous to the optic neuritis of organic cerebral disease. If, however, we are to accept the occasional occurrence of aphasia as evidence of the adjacency of the speech centre, is it not a little remarkable that conversely hunger and thirst are so rarely associated with the many multiple cases of aphasia? On the other hand the condition may be the outcome of a general cerebral disturbance: thus voracity is a common symptom after an epileptic fit, but soon passes off; and thirst is still more common, both before and after the fit. Many epileptics, as the fit passes off, will swallow glass after glass of water in furious haste. In the discussion following the paper Dr. Colman suggested a happy parallelism to the cases of loss of memory, which after a fit lasts only a short time, but for much longer periods after a severe injury.

Dr. Stoker has been scandalizing the conservative propensities of the various medical societies by communications which at any rate have the merit of startling originality. He had observed that wounds containing staphylococci healed much more readily than those from which these organisms were absent, under treatment with oxygen. With the courage of experience—or of ignorance, as the elect would have it—he introduced these organisms into certain dilatory ulcers, and claims to have greatly accelerated their healing. Until more exact evidence, beyond all suspicion of experimental error, is to hand we must needs suspend judgment on the matter. If, on the other hand, we accept the proposition, the corollary is obvious, that we have been too indiscriminate in our antiseptic warfare by sparing neither harmful nor harmless microbes; or, indeed, we must postulate the beneficence of some that act as scavengers of organic débris, and flourish in a highly oxygenated atmosphere. The cases that were brought before the Harveian Society may be studied in detail to advantage, as they suggest not a few openings for error.

Case I.—Mrs. B., aged fifty-one; had suffered from ulcerated legs for seven years; the ulcers commenced with an abrasion of the skin. She was first treated at the Chelsea Dispensary for three years with lotions, ointments and internal medicines. She lay up at home for three years while using these remedies. Afterwards she received similar treatment at St. George's Hospital for three or four years, but the ulcers never healed. She came into the Oxygen Home on December 28, 1896, with three large and two small ulcers. Under treatment with equal parts of oxygen and purified air, two of the large ulcers healed in eleven days, the other three partially. Accordingly these were inocculated with staphylococci, and by February 4 two were quite healed and one nearly so.

Case II.—Mrs. H., aged thirty-eight; admitted to the Oxygen Home October 21, 1896. At Christmas, 1894, she was treated at St. George's Hospital for one small ulcer, which healed, but broke down again in July, 1895. In January, 1896, was treated at University College Hospital with improvement, but still the ulcer did not heal. In April, 1896, she returned to St. George's, and had lain up at home till admission. She was treated with equal parts of oxygen and air, and on November 23 the two small ulcers were quite healed. On December 21 a large ulcer was healed but for two small foci, which on January 22, 25, 26 and 27 were injected with

staphylococci, and by January 29 these were completely healed.

To these cases is appended a Bacteriological report by Messrs. Stoker and Dariey:

CASE I.—Before commencing the oxygen a cultivation was taken from the ulcer on agar-agar; after incubation it was found to contain a pure growth of staphylococcus *pyogenes citreus*.

Out of upwards of sixty cases examined, this was the first and only one in which a pure growth of staphylococcus was found previous to the commencement of oxygen treatment.

CASE II.—A cultivation taken before treatment with oxygen was found to contain bacillus *fluorescens* and staphylococcus *pyogenes albus*; the former disappeared after a few weeks.

As Dr. Stoker remarks, the main gist of these cases is to show the important relation between oxygen and staphylococci in promoting healing, but we cannot accept his conclusions as irreproachable. The central point is that whereas healing was only partial under treatment with oxygen alone, complete healing was induced on the accession of staphylococci; and if this were the whole case we should have to admit the corollary that there is some important interrelation of oxygen and staphylococci in promoting the healing process. In the first place, so far as the record shows, there was no absolute arrest of healing, but merely a retardation of the process, such as is usual at some period in the healing of most ulcers; then again there is no evidence by bacteriological testing of any activity of the staphylococci after inoculation. We would suggest that the better method would be to treat simultaneously two series of ulcers in which no tendency to healing is obvious, the one with oxygen alone, the other with oxygen and staphylococci combined, and to compare the results. Again, though we are convinced from inspection of cases that treatment with oxygen is most beneficial, we necessarily get a most inaccurate estimate of its value by contrasting cases so treated and in bed with cases treated by other methods but without perfect rest. Any one who knows the homes of the poor is well aware of the futility of "lying up at home." We would wish to see two series of cases treated side by side under the same conditions of rest and general hygiene —the one treated with oxygen, the other without. Our own experience of Unna's method is so highly satisfactory that we should hesitate to recommend any other method to the family bread-winner. We have no wish to carp at Dr. Stoker's statements, but we should like more unimpeachable evidence.

In the *Indian Medical Lancet* Surgeon-Captain Roberts suggests the *rationale* of the domestic remedies for hiccough, which will probably not have struck many of our readers; nor will many be aware that these remedies were in use in the time of Plato. Hiccough is inspiratory spasm of the diaphragm, and in many diseases, particularly of the lungs and abdominal viscera, is a symptom of great prognostic import. The vagus by its laryngeal branches and the fifth nerves are the afferent nerves most intimately associated with respiration, while the glosso-pharyngeal exerts an inhibitory influence at the commencement of deglutition; hence the efficacy of such remedies as sipping a glass of water, eating a lump of sugar, and gargling; reflex inhibition of this kind is certainly more effectual than volitional, though sometimes simply holding the breath is sufficient to cut short an attack of hiccough.

In a recent article in the *National Review* Dr. Shadwell again conjures up the hydra-headed spectre of hidden disease to terrorize the lady cyclist. This time there is no talk of spinal concussion or curvature, none of irritable and dilated heart, but the familiar phantom of "nervous exhaustion" stalks abroad, seeking whom he may devour. The "*vera causa*," he writes, "seems to be in the extreme instability of the two-wheeled machine, which can never be left to itself for a single moment without dismounting; to ride it safely entails a double strain—a general one on the nerves and a particular one on the balancing centre." Now without following the writer into his minute discrimination between the fatigue of muscular effort and that of nerve exhaustion, which in cycling we cannot dissociate or distinguish, we would urge a common-sense view of the case. No doubt harm has accrued to some who have kept within the bounds of absolute excess, but we cannot for that reason admit that due moderation was observed; each rider must be a law to him or herself, and one cannot set up an absolute standard. But so universal is the consensus of opinion in favor of its general benefit, that we do not grudge these few hostages to the well-being of the majority. Cycling has often driven out the evil spirit of mental lassitude, which is the first stone in the building up of functional nervous disorder. No doubt the absorption of the fac-

ulties has done much to render the fatigue effects illusory, but none the less there comes a to-morrow of reckoning. Appetite has always seemed to us to be as sure a gauge as any of individual capacity, so accurately does the stomach reflect the general muscle state. To some there comes a fierce craving for food, and to these, as Homer to his heroes, we would award chines of beef; but with others the stomach stubbornly revolts from food, and these have surely exceeded.

The ravages of venereal diseases among the British troops in India have at last gained the ear of the Government; and the reason seems to be that in the absence of preventive measures it has become a question of importance to the safety and integrity of the Empire, by its influence on the efficiency of the army in India. The statistics of the Principal Medical Officer's Report show that the total number invalided for venereal diseases in a single year was 1663, so that nearly one-fifth of the whole strength were sent home on this account. The Secretary of State for India has appointed a Departmental Committee, under the presidency of Lord Onslow, to inquire into and report on the actual conditions. We are glad to see that the Indian Army Medical Staff is adequately represented on the Committee, as they alone have intimate knowledge of the extent of the evil. At a recent meeting of the Royal United Service Institution, Major-General Dashwood, in a statistical paper, brought the whole matter in all its bearings into public attention. Even if Government interference should fail to bring about a re enactment of the Contagious Disease Acts, we may at least hope that the irrational and illogical distinction from the preventive measures applied to other infectious diseases may be removed. Meantime, at the Royal College of Physicians of London, it was resolved on the motion of Sir Dyce Duckworth, seconded by Sir William Priestley, M. P., "That a committee be appointed to advise the College on the desirability of making a formal declaration of opinion to the Government in favor of the re-enactment of the Contagious Diseases Acts in India, or of some such modification of them as may prevent the spread of contagious diseases;" and an influential body of Fellows was nominated by the President to serve on the committee.

The question of medical defense is still sorely exercising a certain section of the profession. For our own part we are disposed to dislike any measures of protection of a special character, as not likely to dignify the existing relation of doctor and patient; nor does the greater liability of the medical profession to false charges seem to us an adequate reason for a specially organized system of medical defense. If, however, such is destined to exist, there should clearly be no attempt to cast the burden of its working on any composite body, such as the General Medical Council or the British Medical Association—rather it should be of the nature of a purely private speculation, in no way involving the support of those who do not seek to participate in its privileges. The present state of affairs is due to the existence of two chief societies side by side, to the mutual disadvantage of either, crippling the efficiency each of the other, and rendering their common object nugatory. The recent suit of Cullingworth *vs.* Beattie has shown that medical men are not slow to succor their brethren in the hour of honorable distress.

The initial energy of the Hospital Reform Association has not yet blossomed out into even a hypothetical solution of the many difficulties that surround the matter. A close inquiry, under the auspices of the Charity Organization Society, into the social circumstances of those attending the out-patient department of one of our largest hospitals has led to the rather unexpected conclusion that only an infinitesimal fraction of this number can be said to be in a position to pay for private medical attendance. We are of course aware that the proportion at the special hospitals would in the nature of things be very much higher, but equally we believe that this finding would hold good for most of the large general hospitals. Nor can we blame this more well-to-do section for seeking at the special hospitals such advice as they cannot afford at the consulting-room of the specialist, and which it would be absurd to demand of the general practitioner with the many duties already resting on him. To meet such cases the hospitals should rather formulate some graduated scale of payment to be assessed in each case by a hospital almoner. It has also transpired that a very large proportion of out-patients require no medicine at all, but merely food and home care. It is true that the Pharmacopœia contains some excellent samples of the former commodity, but we venture to think that the necessary combination would be more effectively administered by referring such cases to the Poor-law. This would go far to reduce the unmanageable numbers, with which at

present our out-patient departments are hampered. Another less easily remediable problem is that the better and more expeditiously relief is administered to applicants, the larger becomes the demand on the work of that hospital, and so it results that the better the work is done the more are the workers hampered in its efficient performance —and this for the most part by the merest trivialities of accident and disease.

PARIS LETTER.

By A. R. Turner, M.D. (Paris).

During the next few days there will be tried in one of the Paris criminal courts a case which has already caused much comment in the medical and lay papers of this city.

A young woman, employed in one of the best known shops of Paris, died some days after the operation of curetting, and it was charged that the physician who performed the operation, as well as the physician who had sent the patient to him, were aware that she was pregnant, and that the operation was in fact a criminal abortion. What more than anything led people to this opinion was the fact that the paramour of the woman, an official of one of the towns situated just outside of Paris, shot himself on receiving a telegram containing the words "All is known."

It is charged that in reality the physician performing the operation, and who was at the head of a gynecological clinic, had more than once performed such operations. This event caused the greater interest from the fact that though comparatively young he occupied in the scientific world a certain position which, though not of the first place, was yet of some importance.

According to French custom the two physicians were arrested and kept in prison for some months. Only recently have they been allowed to communicate with their counsel. It is said that about 150 witnesses will be called.

One of the results of this scandal has been that two Syndicates or Associations of Physicians in Paris have been quarreling ever since. One calls itself "Le Syndicat des Médecins de Paris," the other "Le Syndicat des Médecins de Paris et de la Seine." One of the two accused physicians belongs to both of the Syndicates, the other to one only. One of the Syndicates passed a motion in which they said that their past knowledge of their colleague inclined them to look upon him as innocent. Ever since then the two Syndicates have been requesting the public generally not to confound them, a thing which it is rather difficult not to do, on account of the similarity of their titles.

The interest in this case does not, however, depend upon the event itself so much as upon the current of public opinion which it reveals. Ever since the publication of the book "Les Morticoles," written by Leon Daúdet, a son of Alphonse Daúdet, the medical man has played in French literature, and above all in French contemporary drama, the rôle of villain, or at least what might be called a most unsympathetic part.

In a recent French play, "L'Évasion," out of several medical characters one only, the old country doctor, is not a fool or a scoundrel, two especially of the others being, one an old and highly placed physician who confesses in a moment of weakness that science is nothing, and another a younger man who seduces his female patients.

In all nations, and above all in France, public opinion moves from one extreme to another, not suddenly, however, but during a period of years; and it may be said that the rôle played by the physican in French literature is the exact opposite of the part given to him some fifty years ago, a good example of which may be found in Balzac's "Le médecin de Campagne."

An interesting article might indeed be written on the physician in the literature of all nations. Taking it altogether it would seem to me that he has either been drawn as a superhuman being, whose object in the book is to give expression to those reflections and sentiments which the author would in some cases express for himself, or else that he plays a comic rôle. Certainly the latter is what he does in certain of Thackeray's works, in "Pendennis" for instance, or even in the part of Dr. Filmer, if I remember the name correctly, in "The Story of Philip."

One modern author, Walter Besant, is rather fond of introducing medical men into his books; they usually, however, leave their shop outside, and indeed but one of them really lives—that is Mr. Brinjes, in "The World Went Very Well Then." With him we all sympathize, I think, notwithstanding the Devil which dwells in him; and by his side the other characters of the work are colorless.

Various forms of local tuberculosis have been treated by Lannelongue's sclerogenous

method, namely, by the introduction around the focus of disease of a few drops of a ten-per-cent. solution of zinc chloride.

Recently Dr. Lannelongue has tried it in an entirely different affection, namely, in the treatment of infantile hernia. The patient was a boy of fourteen years. After shaving and cleaning the region the hernia is to be reduced and carefully maintained so by an assistant, who compresses with his finger the internal inguinal orifice so as to cut off the peritoneal cavity from communication with the remainder of the canal. Next all the various elements of the spermatic cord should be gathered together. The cord being held with the left hand the right should plunge the needle of a hypodermic syringe filled with the chloride of zinc perpendicularly to the pubis and until the very bone is reached, when the point of the needle is turned under the posterior surface of the cord, and five drops of the solution are expelled into the fibrous tissue there situated.

Altogether eight or ten injections, or thirty to forty drops of the solution, are made into the fibrous tissue surrounding the cord. Some of the injections should be made at a lower or higher level than the others. An antiseptic dressing should be applied, and the child kept in bed eight days.

According to Dr. Lannelongue this operation is in nowise dangerous when carefully performed.

It has been claimed by a Russian military surgeon, N. V. Guéorguiévsky, that the application of compresses dipped in chemically pure solution of bicarbonate of soda, of the strength of two per cent., arrests the production of pus and stops all inflammation much more rapidly than does the use of any of the antiseptic agents usually employed, such as carbolic acid or iodoform, etc. In several cases when all suppuration had ceased through the effect of the solution, the use of an iodoform ointment has caused it to appear once more.

Notes and Queries.

THE WEATHER BUREAU IN ITS RELATION TO MEDICAL CLIMATOLOGY.

The following resolutions were adopted by the Medical Society of Bernalillo County, New Mexico, at the meeting held January 15, 1897, and as they deal with an important climato-therapeutic subject we are glad to print them:

Whereas, This Society is impressed with a sense of the supreme value of the methods and work of the Weather Bureau of the United States in their relation to the science of Medical Climatology, as illustrated in the series of statistical tables published in Volume I, Annual Report for 1885, of the Signal Service (now Weather Bureau); said tables embracing all the data bearing upon nearly every meteorological feature necessary to a complete determination of the climate of many points scattered over the whole of the United States, so far as these data had accumulated up to the date of that Report; and

Whereas, The value of these tables would be greatly enhanced by working into them the data accumulated in the course of the eleven years which have elapsed since 1885, and a volume of immense value to the medical profession might be produced by appending to these tables, brought up to date, some account of the topography, geological formation, natural drainage, nature and source of water supply, vicinity of mineral springs, etc., etc., at each station where observations are taken; therefore

Be it Resolved, By the Medical Society of Bernalillo County, New Mexico, that the Chief of the Weather Bureau of the United States be respectfully requested to take this matter into consideration; that the American Climatological Association be requested to co-operate with the Weather Bureau through a committee appointed for that purpose, if mutually agreeable; that copies of these resolutions be transmitted to the Chief of the Weather Bureau, to the Surgeons-General of the Army, Navy, and Marine Hospital Service, to at least three of the principal medical journals of the United States, to the American Public Health Association and the American Medical Association, and to every State Medical Association in the United States, and their co-operation invited.

INTUSSUSCEPTION IN CHILDREN.

In the hope of obtaining statistics which may prove of value in determining the true mortality of intussusception in children, the undersigned has endeavored to make a collection of unpublished cases, and with this end in view has sent several hundred letters to physicians in general practice. The greater number of these have had no experience. It is in the hope that some of the readers of the GAZETTE may have seen such cases that the appended questions are published. Answers will be very greatly appreciated by Dr. Edward Martin, 415 South Fifteenth Street, Philadelphia.

Seen by Dr..... In personal practice..... In consultation..... Age of patients..... Cause of intussusception (polyp ?)..... Symptoms—Tumor..... Passage of bloody mucus..... Tenesmus..... Vomiting..... Intense pain..... Treatment—Medical ..... Result..... Mechanical (injection of air..... water.....massage.....) Result..... Period elapsing from first symptom to mechanical treatment..... Treatment—Operative (Disinvagination through abdominal opening.....) Result..... Resection..... Result..... Seat of invagination..... Amount of bowel resected..... Method of joining intestines..... Period elapsing from the first symptom to the time of operation ..... Results of autopsies.....

Further details not covered by the above headings will be gladly received, such as recovery with passage of slough, etc.

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